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NOTES ON BLOOD PRESSURE READINGS AND THEIR VALUE.[1]

By J. FERGUSON STEWART, M.B., Ch.M. (Glasgow), *Perth.*

IT is over three centuries since Harvey discovered the circulation of the blood and nearly two since a clergyman named Hale in 1733 demonstrated the blood pressure, but it was not till about 1900 that any general use was made of blood pressure measurements by our profession for diagnosis and as a guide to treatment. Sphygmomanometers prior to that date were chiefly known as instruments for laboratory experiments.

The introduction of the sufficiently accurate spring type of instrument made the sphygmomanometer a portable instrument, capable of being included in the ordinary equipment of the physician.

Although, as Sir James Mackenzie stated, no mechanical method can ever be a proper substitute for the *tactus eruditus* which it is the object of training to develope to its full extent, there is no doubt that a mechanical means of recording must be of value in comparing the observations made by different individuals in no two of whom can the educated touch be exactly the same. It has been estimated that the margin of error in estimation of the tension by touch may be anything from ten to eighty millimetres of mercurial pressure. Such a difference means that the observations of one man cannot be fairly compared with those of another. Even with the sphygmomanometer used by the older palpatory method this difficulty would continue, so that it is necessary to have not only standardized instruments, but also to have a uniform method of using them and as important as either of these is a standard terminology.

The auscultatory method, I assume, is the method now generally accepted as being the most accurate, yet one feels doubtful of this sometimes when one reads articles in which what appear to be rather low systolic pressures are quoted as "normal." I have frequently taken blood pressures in the sitting posture in lads of sixteen to twenty years and have come quite to expect systolic pressures of one hundred and forty millimetres. These lads are not ill, but are military examinees and in good physical condition by their own showing and in some instances I have examined the urine to exclude the albuminuria of adolescence. Their pressures may be high from emotional causes, such as nervous-

[1] Read at a meeting of the Western Australian Branch of the British Medical Association on July 15, 1925.

ness or from the exertion of walking to my house, but the majority of those I have tested, had been sitting in my waiting room for from ten to twenty minutes; exertion may, therefore, I think, be excluded as a cause of the rise.

Even with a uniform adoption of the auscultatory method a difference of opinion seems to exist as to what phase indicates the diastolic pressure. Five phases are described: The first is the loud click as the blood gains access to the constricted portion; the second is a muffling or dulling of the loud first sound; the third is a resumption of the loud sound; the fourth is a muffling or dulling again ending in the fifth, the cessation of all sound.

One school apparently considered and may still consider the fifth phase, that is cessation of sound, the diastolic reading. According to Howell's "Physiology" the later view is that the diastolic pressure should be read as the third phase merges into the fourth. Cowing gives this as the time for reading and my experience is that if you do not adopt this view, you will get a large proportion of pulse pressures of forty or more and very few of twenty in healthy persons.

I hope to learn tonight from some of my hearers of some uniform scheme of pressure taking having been adopted and also of a uniform terminology. My own readings of pressures have led me to formulate a rough guide to the normal or at any rate to the not abnormal. It is to regard as sufficiently satisfactory a systolic pressure which is as much as the patient's age *plus* one hundred. Thus a man of forty may have a systolic pressure of 140 millimetres without any pathological significance. This is looking at it in a partial way, however, for systolic pressure is not more than one-third of the picture and much will depend on what his diastolic pressure may be.

Faught suggests adding to the figure 120 (the normal systolic pressure for the age of twenty years) one half of a millimetre for each year of life above twenty. Thus he would call the normal average systolic pressure at age sixty 140 millimetres though he gets 145 millimetres as the result of his calculation! I think this decidedly low; my own estimate would be 160, while Potain would call 210 to 220 normal!

In his article in the "Oxford Medicine," Volume II., Sir James Mackenzie stated:

> We are as yet far too ignorant of the factors concerned in the variations of arterial blood pressure to be able to make much use of them in practice.

And further on he continued:

> This study requires that the blood pressure of individuals should be taken while they are in health and at the outset of their disease and at times during its progress.

I think that all who have been reading their patients' blood pressures, will endorse his words, for I have felt disappointed in my small experience with the restricted value of manometric readings of the pulse and it seems strange that there should not have been ere this at least a standarized method of taking the readings. One is constrained to believe that different methods of estimation are in use by the discrepancies in tables in textbooks. It is apparent from Potain's figures as to normal blood pressure that he means systolic blood pressure, yet Faught in his "Blood Pressure" calls the figures normal blood pressure figures as given by Potain, but then Faught definitely states that by the term blood pressure is meant the systolic pressure. In giving Chamberlain's statistics of blood pressure of American soldiers in the Philippine Islands it is obvious from the low figures that the "mean" pressure must be meant and later on in the text this view is corroborated.

Again the figures by different observers are spoilt by the fact that readers do not know whether the author used the auscultatory or the palpatory method when taking the reading. These two methods admit of a discrepancy of several millimetres. And again there are differences of opinion in regard to which is the true diastolic reading, at least by the auscultatory method, the end of the third or of the fifth phase.

As examples of the above I will quote the figures given in the seventh edition of Howell's "Physiology," as Potain's findings for average systolic pressures at different ages.

TABLE I.—AVERAGE SYSTOLIC BLOOD PRESSURES ACCORDING TO AGE (POTAIN).

Age Group (Years).	Systolic Blood Pressure (Millimetres).
6 to 10	89
11 to 15	135
16 to 20	150
21 to 25	170
26 to 30	180
31 to 40	190
41 to 50	200
51 to 60	210
61 to 80	220

Whereas Chamberlain's figures of average systolic pressures in soldiers whose ages ranged from eighteen to over forty, are as follows:

TABLE II.—AVERAGE SYSTOLIC BLOOD PRESSURES ACCORDING TO AGE (CHAMBERLAIN).

Age Group (Years).	Systolic Blood Pressure (Millimetres).
18 to 20	115
21 to 25	114
26 to 30	116
31 to 35	116.7
36 to 40	120.5
Over 40	119.6

Such a discrepancy cannot be accounted for by any other means than that the two observers used the term systolic pressure in different ways; both are average, but Chamberlain's are also mean pressures. It is not climatic influence because he adduces the figures to show that the native Filipino's pressure is practically the same as the American and elsewhere it is stated that even tropical climates only slightly influence the blood pressure of new arrivals and that only temporarily.

By the mean pressure I mean the arithmetical mean obtained by adding the systolic and diastolic figures together and dividing by two. Even by adopting this view the figures of Chamberlain would probably give much lower systolic pressures than Potain's, which seem to be higher than any others I have seen quoted.

The factors on which blood pressure depend are: (i.) cardiac energy, (ii.) peripheral resistance, (iii.) elasticity of the arterial walls, (iv.) the amount of blood in circulation.

Faught adds a fifth, namely, the viscosity of the blood, but he admits that as we at present know nothing of its effect on blood pressure, we have to ignore it.

These four factors have to act harmoniously with each other in order to maintain a healthy blood pressure under varying conditions, for our blood pressure is affected by external factors and also by internal factors not directly concerned, like the abovementioned with its maintenance, but acting indirectly, as for instance through the vasomotor system, both in health and disease. Exercise and posture are influences affecting it from without, while emotion is an internal factor operating on it through the vasomotor system.

Age and sex influence blood pressure, more especially the former. This being the case, even in health the matter is complicated enough, but when disease adds one or more new influences, one wonders if any conclusion of value can be arrived at except in a small percentage of our patients. Thus no particular deductions can be made in the case of a man of forty with a systolic pressure of 140 millimetres, who combines a tuberculous condition with arterio-sclerosis for through the reducing effect of his tuberculous ailment, his blood pressure reading so far as the systolic pressure is concerned, is not abnormal for his age, which it would otherwise have been on account of the arterio-sclerosis.

As Sir James Mackenzie pointed out, it really seems necessary to know what each individual's pressure was in health, at the onset of his illness and to follow it constantly during its progress.

It is evident that even among experts differences in the readings are presented for normal conditions. Cowing in a small book entitled "Blood Pressure Technique Simplified" states that:

> Pressure readings are always higher when standing than when sitting and higher when sitting than when reclining;

and further adds that there is a fall of from four to eight millimetres for each position.

On the other hand, Faught in a larger book entitled "Blood Pressure" gives tables setting forth a rise of as much as twenty millimetres on lying down and in the text he says:

> The weight of opinion is that pressure tends to rise as the individual passes from the standing to the head down posture.

Howell in his "Physiology" does not commit himself, but states that by hydrostatic law a fall would result on passing from the lying to the vertical position, but that the vasoconstrictor action on the splanchnic vessels counteracts this normally. He further points out the effect of getting up suddenly on a person long confined to bed and the disagreeable effects produced on four footed animals when held in an upright attitude. These effects are said in the case of the rabbit to be fatal.

To test the matter I took the blood pressures of eight available persons and found varying results both in the systolic and the diastolic pressures, but the most interesting feature was that the pulse pressure was raised in each person except one (a child of eleven years, whose pulse pressure did not vary whether standing, sitting or lying), the rise in four being exactly twenty millimetres, in one seventeen millimetres and in two ten millimetres. This, I think, explains why a faint person is best placed in the horizontal position or even in the head down position, no matter whether his systolic pressure is raised or lowered, for it looks as if the pulse pressure were raised whichever happens. I cannot suggest a reason for the child's pulse pressure remaining unaltered unless it is through the habit of boys of that age assuming all sorts of attitudes and it is a relic of a constant pulse pressure in any position which our arboreal habits caused us to acquire in the prehistoric past. Incidentally it was noticeable that the effect of posture on two of the eight tested who were in the best training, was to lower the systolic pressure on passing from the standing to lying by from ten to thirteen millimetres and the diastolic by thirty millimetres.

Among the eight persons were included two females, one of whom had a systolic rise of ten millimetres on lying down, the other being unaffected, but both had a diastolic fall of ten millimetres. To me it seems that a rise in blood pressure should occur on standing up as effort, however unconscious it may be, is made to maintain the upright posture and effort or work always produces a rise of pressure in health.

This brings me to a point on which Cowing lays stress, namely, that to read a systolic pressure is to do only one-third of the work, for he insists that the diastolic pressure must be read or the pulse pressure cannot be calculated in order that the three may be compared. He then goes on to say that the systolic pressure only indicates the maximal pressure and that this is a very variable quantity, whereas the diastolic, as representing the peripheral resistance, is practically a constant quantity and shows the true pathological condition of the artery tested and the peripheral resistance that the heart must overcome in order to carry on its work. If this be so, then the diastolic pressure would represent the heart load. Later on he refers to the pulse pressure as the index of the heart load. Does the pulse pressure not rather indicate the ability of the heart to carry its load as represented by the diastolic pressure reading? In other words, the pulse pressure is the index of a heart's energy or dynamic force, so that with a high diastolic reading, that is, a big load, one expects a high pulse pressure or else failure of com-

pensation. An exception to this would be aortic regurgitation in which the diastolic reading will be low owing to the regurgitation through the valve and yet a very high pulse pressure will result if a strong heart is giving a high systolic reading. The reading of a systolic pressure might lead and, I believe, has led to improper treatment, for if a man sets out to reduce a high systolic pressure just because it is higher than the normal of health, he may cause a strongly acting and compensating heart to fail. One has to discover why the pressure is so high and relieve the heart, if possible, of the need for keeping up so high a tension. Unfortunately there are cases in which one cannot do this, owing to the ravages of disease or age or both and one is faced with the Scylla of cerebral hæmorrhage on the one hand and the Charybdis of heart failure on the other.

If œdema of the ankles and an enlarged liver develope in a man with a high diastolic pressure, it will be because his diastolic pressure is too high, even for his high systolic, that is, his pulse pressure is not great enough and by putting him at rest and raising still further his systolic pressure, his pulse pressure will rise also and his œdema and hepatic enlargement will subside. I admit that the ideal would be to lower his diastolic, in other words to cure him, but if the disease be interstitial nephritis or old age, how is one to do it?

Summarizing my impressions, I would say:

1. That the universal adoption of a uniform system of reading is needed.
2. That a universally uniform terminology is needed.
3. That there should be recognition that a systolic reading by itself only gives a partial knowledge and that it is not much use for statistical purposes or for comparisons.
4. That the more general use of the sphygmomanometer is necessary.

As already stated this method of aiding our powers of diagnosis is declared by high authority to be as yet of comparatively little value, but I think that it will only become possible to assess its value by using it more constantly for the examination of the healthy as well as the diseased and so obtaining more data on which to found our knowledge.

JAMES COOK AND THE AUSTRALIAN MEDICAL HARBINGERS.[1]

By Norman J. Dunlop, B.A., B.Sc., M.B., Ch.M. (Sydney), *Sydney.*

Introduction.

I must first of all thank Dr. Scot Skirving, the Chairman, and Dr. Moran, the Secretary of this Section of the New South Wales Branch of the British Medical Association, for inviting me to contribute a paper at this meeting, but at the same time I must admire their temerity in doing so, for I can say with one of "them-of-old-time": "Who am I that I should address this people; I am not eloquent, but am slow of speech and of a slow tongue." Neither have I the facile pen of J. M. Barrie who with the dexterity of an artist can produce pictures which delight the souls of all men even the dullest; nor do I possess that gift of expression so highly developed in our Chairman. It is because and only because I feel a great honour has been conferred on me, that I have the courage to come before you tonight. In this essay on James Cook and the Australian medical harbingers, I will say nothing of the birth and parentage of Captain Cook nor of his early days on a farm, his career in the shop of the haberdasher, his apprenticeship on board the collier *Free Love,* his experiences as able bodied seaman and mate in the merchant service, his voluntary entry into His Majesty's Navy, his master's warrant which he obtained on May 10, 1759, his great work on the River St. Lawrence and in North America, his marriage with Elizabeth Batts at Barking in Essex nor of the Dalrymple controversy. I shall come at once to the year 1768, when James Cook was appointed to the command of the barque *Endeavour* and promoted to the rank of lieutenant in His Majesty's Service. His commission was dated May 25, 1768.

The "Endeavour."

The *Endeavour*[1] was not one of His Majesty's ships, but one of those cat built vessels which were so much used in the Baltic and in the coal trade on the English coast. She is described as a barque of three hundred and seventy tons burthen. The cat built ships were very strong with a narrow stern, projecting quarters and deep waist. They were, too, distinguished by their great carrying capacity and comparatively small draught. Cook greatly favoured a ship of this class for the voyage to the Southern Seas and claimed later that by sailing in the *Endeavour* he was able "to traverse a far greater space of sea till then unnavigated, to discover greater tracts of country in the high and low south latitudes and to persevere longer in exploring and surveying more accurately the extensive coasts of those newly discovered countries than any former navigator, perhaps, had ever done during one voyage." ("Voyage Towards the South Pole," Volume I., page 26.) Only the other day in *The Sydney Morning Herald* of May 2, 1925, to be precise, we were told of the fate of Cook's old barque. Sold in 1790 to Captain Hayden of New Bedford, a place well known in the old whaling days, she was intended for the whaling industry and was registered as a French vessel under the name of *La Liberté.* But her glory had departed and she was eventually broken up and used as fire wood. Some of her timbers were preserved till within two or three years, but these too in fragments retained as relics are now scattered far and wide by mountain, stream and sea. What a fate for a noble ship! To the command of the *Endeavour*

[1] Read at the inaugural meeting of the Section of Medical Literature and History of the New South Wales Branch of the British Medical Association on June 26, 1925.

[1] The *Endeavour* was always referred to as the "bark *Endeavour*" or the "*Endeavour* bark." This was due to the fact that there was another ship of the same name in the navy at the time.

Lieutenant Cook was appointed on May 25, 1768, and he took charge two days later. The ship lay in the basin in Deptford yard where she remained till she was fit for sea.

Childhood's Fancies and After.

Away back in my very early days, I must confess, I formed a very false estimate of the character of Cook and those heroes who sailed with him. It was my childish ignorance of course, but I regarded them as being something more than supermen; I thought they were almost superhuman. This judgement, too, I find has been shared more or less by quite a host of others. Besant describes Cook as "tall, thin, grave and even austere." I have however in these later days been forced to modify somewhat my opinion of those heroes, having discovered that they were men, just ordinary companionable men, subject to the same passions as we are and had the same frailties. I love them all the more for being only human. Banks wishes to tell something and I shall let him say it.

> After leaving this place (Rio de Janeiro) on the eighth of December we went south making for Tierra del Fuego. Christmas Day, 1768. All good Christians, that is to say all good hands, got abominably drunk, so that all through the night there was scarce a sober man in the ship. Weather, thank God, very moderate; or the Lord knows what would have become of us (Banks's Journal).

Is that not human? Is that not delightfully human?

The Transit of Venus.

The phenomenon of the transit of Venus across the sun's disc, the observation of which was the primary object of Cook's voyage to the southern seas, deserves something more than a mere passing mention. It is by the observations of the transit that the distance of the sun from the earth can be accurately estimated and by using this measurement as a unit —as a foot rule we might say—the scale on which the solar system is constructed, may be determined.[1] Accurate observations on the transit of Venus are of inestimable value to the science of astronomy and that of navigation. The necessity of travelling to the utmost parts of the earth to do this work invests these observations with an air of importance and adventure. Owing to the combination of the earth's motion with that of the planet Venus the latter passes in front of the sun at curious intervals of eight years, one hundred and thirteen and a half years *minus* eight years, eight years, one hundred and thirteen and a half years *plus* eight years (Flammarion). That is to say the transits of Venus come in pairs connected by an interval of eight years. After one pair of transits there follows a period of either one hundred and five or one hundred and twenty-two years before the next pair occurs. The period of one hundred and five years follows that of one hundred and twenty-two years and the period of one hundred and twenty-two years follows that of one hundred and five years in regular succession. Sir Robert Ball says: "This most remarkable law with reference to the recurrence of the transit of Venus is the well known eight year interval." Thus there was a transit in 1631 and another in 1639; then there was an interval of one hundred and twenty-two years, when the phenomenon again happened in the year 1761. It also occurred in the year 1769. After an interval of one hundred and five years there was another pair of transits occurring in the years 1874 and 1882. The next transit will be in June, 2004, when, I predict, we shall have been gathered unto our fathers. "The rarity of the transits arises from the fact that the path of the planet is inclined to the plane of the earth's orbit" (Ball). When Venus overtakes the earth—she moves more quickly than our planet—the line from the earth to Venus will, therefore, usually pass over or under the sun and Venus will be visible as the morning or evening star. If, however, it should happen that Venus overtakes the earth at or near either of the points in which the plane of the orbit of Venus passes through that of the earth, then the sun, Venus and the earth will be in a line and a transit will be the consequence. "The earth passes through one of the critical parts every December and through the other every June. If, therefore, it so happens that the conjunction of Venus occurs at or close to June 6 or December 7 then a transit will occur at that conjunction but under no other circumstances" (Ball). Prior to 1631 the transit of Venus did not attract the attention of astronomers. John Kepler (1571-1630), a native of Wiel in Würtemberg, was the first astronomer to appreciate the significance of the transit and foretold that the phenomenon would occur on December 6, 1631; unfortunately he died the year before this took place. On the strength of this prophecy Gassendi turned his telescope towards the sun every day from December 4 till December 8, but did not see the planet on the sun's disc. This was owing to the fact that the transit took place at night between December 6 and December 7 and, of course, was visible only in the southern hemisphere. Kepler, usually so careful and correct, failed to realize that the transit would recur in eight years time and predicted the year 1761 as that in which the phenomenon would next take place. But this error was detected by a gifted youth, Jeremiah Horrox, who having undertaken some computations on the motions of Venus, was confident that on November 24, 1639, a transit would occur. The transit of 1639 was the first actually seen and it was observed under romantic circumstances. Jeremiah Horrox (1619-1641) was born at Toxteth in Lancashire and was educated at Emmanuel College, Cambridge, where he read mathematics and natural philosophy. He devoted himself to the study of astronomy and mastered the works of Tycho Brahe and Kepler. He was only twenty years old when he investigated Kepler's computations and discovered them to be faulty. Horrox was a clergyman and unfortunately the day on which the transit was due was the Sabbath. We can imagine him torn by conflicting desires. Would he worship God in Nature or would he attend divine service in the

[1] Modern methods of determining this unit are quite independent of the transit of Venus. Observations on an exterior planet are more accurate, can be made at night and can be continued for weeks or months. There are also other methods.

church? He did his duty in the sanctuary and was rewarded with the privilege of being the first human to observe this great work of God in Nature. Come with me to church to hear the Reverend Jeremiah Horrox preach.

It is Sunday November 24, 1639. We take our seats at the back of the church just as the sound of the last clang of the bell dies away. Presently the youthful clergyman enters from the vestry and reverently ascends the pulpit stairs. Today he is in some indescribable way different from his usual wont, he seems inspired.

After the conclusion of the preliminary part of the service he gives out the subject of his discourse. On such an occasion can he preach from any other than an astronomical text? In a voice in which there is just a suspicion of triumph, he reads: "The heavens declare the glory of God and the firmament sheweth his handiwork." Then to the spellbound congregation he expounds the lengths, the breadths, the heights and the depths of eternal space. He tells them too that the comets, those celestial visitants from the utmost parts of the universe, do not exercise that baleful influence on the sons of men with which they are credited nor do they presage disaster.[1] Finally, with the voice of a prophet he declares that on that sabbath day the Almighty Himself is going to write with His own finger a message on the very face of the sun which, if rightly interpreted, will be of the greatest possible importance to humanity.

The service of the day concludes, he pronounces the benediction and we with the congregation disperse.

When the church work was over at 3.15 p.m. Horrox hurried to his home just in time to see with intense delight a small dark disc-shaped object which he recognized as Venus on the face of the sun.[2] It was winter time when this transit occurred and Horrox had only half an hour before the sun set to complete his observations and measurements, but he had made such careful preparations beforehand that it sufficed to enable him to secure careful and exact measurements. William Crabtree whom Horrox had invited to asist in this work, was so overcome when he witnessed the fulfilment of the prediction that he "lost his head and became good for nothing."

Horrox died in 1641, aged twenty-one years. Of his work the only criticism that can be offered, is that it was a marvellous achievement for one so young. It is from the observations in 1639 that the history of the transit of Venus may be said to begin.

The next Englishman to draw attention to the importance of the transit of Venus was the great Halley, friend and patron of Isaac Newton, who in 1691 read a paper before the Royal Society entitled: "On the Visible Conjunction of the Inferior Planets."

This same astronomer further pursued the subject and in 1716 contributed another paper to the Royal Society called: "On a New Method of Determining the Parallax of the Sun or His Distance from the Earth." In these papers he reminded the English astronomers of the coming transits of 1761 and 1769 and implored them (he would not be alive himself) not to neglect the dates nor their duty.

In the year 1760 the Royal Society wrote to the Lords of the Treasury praying that astronomical expeditions should be equipped and sent to Sumatra and St. Helena to observe the 1761 transit. These expeditions were sent, the request having been granted, but owing to a combination of circumstances the results obtained were worthless. These failures in 1761 made the Royal Society begin at once agitating for other expeditions to be sent to distant parts of the world to observe the transit of 1769. The Royal Society was alive to the fact that, if advantage were not taken of the next transit, another chance of doing this important work would not occur for over one hundred years. It was, therefore, of paramount importance, if the determination of the sun's distance were to be undertaken by English scientists, that other expeditions should be fitted out, that the leaders of these expeditions should be men of undoubted merit and finally that the equipment supplied should be the very best possible.

In February, 1768, the Royal Society approached King George and placed the whole matter before him. He was sympathetic and promised the support of the Government. And so it came about that an expedition was sent to the South Seas with Lieutenant James Cook in command. Just about this time Wallis who had been cruising in the Southern Ocean, returned to England and reported that an island which he had recently discovered and called King George III. Island would be an admirable place from which to observe the approaching transit. This island, now called Tahiti, is situated in the region that had been suggested by the Royal Society. It is placed in the southern hemisphere between 17° and 18° south latitude and between 149° and 150° longitude west.

Captain Cook's Instructions.

Cook's instructions were:

> To proceed directly to Otaheite and observe the transit; then to prosecute the design of making discoveries in the South Pacific Ocean by proceeding to the south as far as the latitude 40°; then, if land were not found, to go west between 40° and 35° till he fell in with New Zealand which was to be explored and finally to return to England by any such route as he should think proper.

In short Cook was to observe the transit of Venus; to corroborate or refute the hypothesis of a great Southern Continent—Dalrymple's hypothesis—to explore New Zealand and then to return home by any route he should prefer.

[1] Year 1624, I do perfectly remember . . . . the effects of that Comet, 1618, still working in the prodigious revolutions now beginning in Europe, especially in Germany. (Diary of John Evelyn.)

[2] Horrox had so arranged and focused his telescope that the image of the Sun was projected on to a large sheet of paper which was attached to the wall of the room.

The South Sea Expedition.

The South Sea expedition was an undertaking of the first magnitude and an enterprise which stirred to enthusiasm the Government, the Admiralty, the Royal Society and other sections of the community —the entire nation in fact. The Government was determined that England should not only maintain but advance her high position in the scientific world; the Admiralty was determined that no one but a sailor should lead the expedition; the Royal Society whose very existence depended on the acquisition of fresh knowledge and research work, was determined to do all in its power to insure the success of the enterprise and finally Cook—this was the tide in the affairs of James Cook which if taken at the flood would lead him on to fame if not fortune—he was determined that nothing, so far as he was able to prevent it, should interfere with the success of the expedition. This was Cook's first command and he was anxious to show himself worthy of the trust that was placed in him. To carry out this work he was raised to commissioned rank. As Captain Scott in our day sailed towards the South Pole with, what he considered, a perfect company, so did Lieutenant James Cook one hundred and fifty-seven years ago circumnavigate the world.

Cook's Crew: Picked Men.

Cook exercised great discrimination in choosing those who should sail with him. With meticulous care he selected his crew; his communications with the Admiralty demonstrate this. Just two quotations will be given:

> June 3rd, 1768. Mr. Cook presents his compliments to Mr. Alcock; hath no objection to Mr. Jno. Gathiry (Guthrey) being appointed boaswain of the *Endeavour* bark; believes him to be a man well qualified for the station.
>
> Deptford, June 3rd, 1768. Mr. Cook presents his compliments to Mr. Stephens and begs leave to recommend the bearer Mr. Stephen Forward [his name was Forwood not Forward] as a very proper person to be appointed gunner of the *Endeavour*.—(*Historical Records of New South Wales*, Volume I., pages 309 and 310.)

If Lieutenant Cook chose with such care a boatswain and a gunner, it is hardly likely that he would relax his vigilance when the appointments of the medical officers came to be considered. It is, therefore, reasonable to suppose that Mr. William Brougham Monkhouse and Mr. William Perry who were appointed to the positions of surgeon and surgeon's mate, were men of ability and well qualified to attend to the health of those who sailed in the ship. Mr. Monkhouse received his warrant as surgeon on May 27, and Mr. Perry received his as surgeon's mate on June 10, 1768.[1]

The crew of the *Endeavour*, at first seventy in number, was increased on August 3 to eighty-five. Besides her crew the *Endeavour* carried a number of scientists, their associates and servants. The addition of these men raised the total of those who sailed in the ship, including Cook, to ninety-eight.

[1] It is well known that until within quite recent times, only the fighting officers held commissions in the Navy; the others including the surgeons were warrant officers.

James Cook, besides commanding the expedition, was commissioned by the Royal Society to be one of the observers of the transit of Venus, his colleague being Mr. Green, late assistant to Dr. Bradley, the Astronomer Royal.

The Scientists.

On July 22, 1768, the Lords of the Admiralty wrote the following letter acquainting Lieutenant Cook with the fact that scientists had been appointed to accompany him to the South Seas.

> Whereas the Council of the Royal Society have acquainted us that they have appointed Mr. Charles Green in conjunction with yourself, to be their observers of the passage of Venus over the disc of the sun in the southern latitudes And whereas they have at the same time acquainted us that Joseph Banks, Esq., Fellow of the Society, a gentleman of large fortune, well versed in natural history, is desirous of undertaking the same voyage; and have, therefore, earnestly requested that in regard to Mr. Banks's great personal merit, and for the advancement of useful knowledge, he, together with his suite and baggage may be received on the bark you command You are hereby required and directed to receive on board the said Mr. Charles Green and his servant and baggage, as also the said Joseph Banks, Esq., and his staff with their baggage, bearing them as supernumeraries for victuals only, and victualling them as the bark's company during their continuance on board (*Historical Records of New South Wales*, Volume I., pages 312 and 313).

Fortunate was Cook in having such splendid scientific colleagues. Joseph Banks deserves particular mention. An ardent scientist, wealthy, with the dew of youth still on him, he elaborately equipped the *Endeavour* with apparatus for research on natural history. It is estimated that he spent £10,000 on the voyage. Included in his suite were Dr. Carl Solander, a friend and pupil of Linnæus, three artists, an assistant, two servants and two negro servants. The details of Banks's equipment must have been well nigh perfect, for John Ellis, Esq., F.R.S., after an inspection wrote to Linnæus: "No people ever went to sea better fitted out for the purpose of natural history nor more elegantly."

Medical Equipment.

An army may travel on its stomach; but a ship will not sail without healthy seamen. The preservation of health, the prevention of preventible diseases and the cure of the sick are, therefore, of supreme importance. On this expedition the medical arrangements were as complete as it was possible to make them. In the month of July owing to a requisition from Mr. Monkhouse an additional twelve month's supply of "surgeon's necessaries" was put on board the *Endeavour*. In the same month the Lords of the Admiralty provided the ship with antiscorbutics and sent the following letter to Lieutenant Cook:

> 30 July, 1768. Whereas there is great reason to believe, from what Dr. MacBride has recommended in his book entitled "Experimental Essays on the Scurvy and other Subjects," and his pamphlet entitled "An Historical Account of the New Method of Treating the Scurvy at Sea" (of which you will herewith receive copies), and from the opinion of other persons

acquainted with scorbutic disorders, that malt made into wort may be of great benefit to seamen in scorbutic and other putrid diseases; and whereas we think fit experiments should be made of the good effects of it in your present intended voyage, and have with that view directed the Commissioners of the Victualling to put a quantity on board the bark you command: You are hereby required and directed to cause the same to be stowed in the bread room or some very dry part of the ship, and take care that the following rules with respect to the preparation of the said wort, the administration of it to the sick &c., be in general observed, viz.:

1st. The malt must be ground under the direction of the surgeon and made into wort (fresh every day, especially in hot weather) in the following manner, viz.: Take one quart of ground malt and pour on it three quarts of boiling water, stir them well, and let the mixture stand close covered up for three or four hours, after which strain off the liquor.

2nd. The wort so prepared is then to be boiled into a panada with sea biscuit, or dried fruits usually carried to sea.

3rd. The patient must make at least two meals a day on the said panada, and should drink a quart or more of the fresh infusion, as it may agree with him, every twenty-four hours.

4th. The Surgeon is to keep an exact journal of the effects of the wort in scorbutic and other putrid diseases not attended with pestilential symptoms, carefully and particularly noting down, previous to its administration, the cases in which it is given, describing the several symptoms and relating the progress and effects from time to time, which journal is to be transmitted to us at the end of the voyage.

Given under our hands this 30th July, 1768.—Ed. Hawke, Percy Brett, C. Spencer. (*Historical Records of New South Wales*, Volume I., pages 314 and 315.)

The "Endeavour" Departs.

The *Endeavour* sailed from Plymouth on August 26, 1768. Who cannot in fancy depict the last few weeks ashore of the Endeavourers—the dinners, the banquets, the picnics, the congratulations showered on those "lucky beggars" that were going and the gentle ministrations of that sex which has always been given to hero worship?

Once as I told in glee
Tales of the stormy sea,
Soft eyes did gaze on me,
Burning yet tender.

Banks whose boyish spirits were in a state of ebullition when the hour for departure was at hand, wrote: "All in excellent health and spirits, perfectly prepared (in mind at least) to undergo with cheerfulness any fatigues or dangers that may occur." Later he put on record: "Took leave of Europe for Heaven knows how long, perhaps for ever." Had the chanty man been on board the ship when the anchor was weighed, this breezy young botanist might have told us: "The anchor was heaved a-weigh to the weird strains of 'Sally Brown'".[1]

I love a maid across the water,
Heigh-ho for Sally Brown;
She's Sal herself yet Sally's daughter,
I spend my money on Sally Brown.

As the old[1] barque was preparing to move slowly from her moorings on Friday morning August 26, 1768, the crowds who had flocked to see her off, gave vent to their feelings. Cheers upon cheers were given, benedictions and valedictions were wafted from the shore to the ship and from the ship to the shore and the hopes of all were high. Parents were there who had come to bid their sons a long adieu, friends were there, sweethearts and wives were there with suffused eyes, trying to keep brave till the last. Then came the climax which perhaps relieved the situation, as the sailormen with characteristic incongruity let go the sails to the tune of "Whisky Johnny":

Then up aloft that yard must go,
Whisky Johnny!
Then up aloft that yard must go,
Whisky for my Johnny.

and on to the last verse:

Oh! Whisky's gone and I'll go too.
Yes! I'll away to Rio.

And so the canvas having been set fore and aft, the *Endeavour* like some great sea bird sailed away into unexplored regions on a voyage pregnant with potentialities.

The First Casualty.

Three weeks after the departure of the *Endeavour* the first casualty occurred. On September 14 the day after the barque had arrived at Madeira, Mr. Weir, the master's mate, while heaving an anchor from a boat "was carried overboard by the buoy rope and went to the bottom with the anchor." He was dead when the body was brought to the surface.

Leaving Madeira after a stay of six days the *Endeavour* shaped her course for Rio de Janeiro where she arrived on November 13.

The Equator.

Crossing the line the Sea God and his satellites paid the ship a visit and the day was set aside for festivities. All hands from the Commander to the ship's cat had to submit to the lady-like caresses of Father Neptune. How they fared in the doldrums—that strip of baffling weather that lies between the trade winds—we have no record; but it may be inferred that they had "the same old hades of a time"—days of calm with the fiercest sun overhead or torrential rains; then days with sudden squalls and shifting winds driving the ship ahead at the rate of about ten miles a day. "Drive her or drift her," it was only by sheer hard work that sailors in the doldrums had any hope of getting their ship into the trade winds again, when life could once more be considered worth living. No wonder the "Ancient Mariner" exuded execrations when he thought of this region.

Down dropt the breeze, the sails dropt down,
'Twas sad as sad could be;
We did not speak only to break
The silence of the sea!

[1] The chanty man never made his appearance in the Royal Navy—more's the pity. I have, for all that, put a few old sea songs into this narrative of Cook, hoping that their inclusion might clothe the dry bones of history with flesh and blood. The words of the chanties were never poetry; very often they were silly; sometimes obscene or even profane. The tunes to which they were sung were at times weird and at times melodious. But to those who understood the language of the deep blue rolling ocean, the chanties spoke words of cheer and had a charm all their own.

[1] A sailor's term of endearment. The *Endeavour* was not an old ship when Lieutenant Cook sailed in her.

All in a hot and copper sky,
The bloody Sun, at noon,
Right up above the mast did stand,
No bigger than the Moon.

Rio and Tierra-Del-Fuego.

The stay at Rio de Janeiro was not pleasant and no one was more happy than Cook when on December 8 he once more heaved the anchor and stood out to sea. From Rio de Janeiro they went south making for Tierra-del-Fuego, as Cook intended to take the route round the Horn. The *Endeavour* dropped her anchor in the Bay of Good Success early on January 15, 1769. At this place on January 16 Mr. Banks led a botanical excursion ashore, taking with him Mr. Monkhouse, the Surgeon; Dr. Solander; Mr. Green, the Astronomer; Mr. Buchan, the Artist; two seamen and some attendants, including Banks's two black servants.

In their wanderings they ascended a mountain in search of specimens and had gone some considerable distance when disaster overtook them. The weather which was fine when they started out, became gloomy and cold with sudden blasts of most piercing wind, accompanied by falls of snow. Owing to the extreme low temperature that had developed by this sudden change, the whole party suffered severely and in the struggle to regain the ship the two black men perished in the snow; while Mr. Buchan and Dr. Solander miraculously escaped a similar fate. From Tierra-del-Fuego Cook sailed on January 21, 1769, and he rounded the Horn on the twenty-sixth of the same month. By rounding the Horn, by careful observations of latitude and longitude and by carefully charting the places visited in this part of the globe, the Commander rendered a signal service to the science and the art of navigation. His next task was to look for Dalrymple's continent which was supposed to be "but a very little west of the common track towards Juan Fernandez." He sailed according to directions but found no Continent; nor did they meet with any currents, "a great sign," wrote Cook, "that we have been near no land of any extent."

Otaheite.

Otaheite hove in sight on April 11 and on the thirteenth the ship came to an anchor in Port Royal Bay where she remained till July 13.

On April 17 early in the morning Mr. Buchan, the artist, who had had such a bad time at Tierra-del-Fuego, died. "He had always been subject to epileptic fits and this disorder being aggravated by a bilious complaint which he contracted on board the ship, at length put an end to his life." Mr. Buchan's body was taken out "and committed to the sea" the same evening.

The Transit.

On April 15 Lieutenant Cook and Mr. Green chose a spot on a sandy beach in the vicinity of the north east point of the bay, where they erected the principal observatory. From this time on everyone was busy making preparations for the coming astronomical observations. On June 1 with the idea of getting the best possible results Cook divided the observers into three parties; one was sent to Emeo or Imao, a neighbouring island; another to a point eastward of the principal observatory; while Mr. Cook and Mr. Green remained at headquarters. The final arrangements for the observations of the transit were completed by bed time on June 2 when the scientists retired to rest and hopefully thought of the morrow. Next day the forces of Nature worked with and on the side of the observers.

The day broke fine and clear without even a cloud in the sky. Nothing is so conducive to good work as a sympathetic audience or a pleasing environment. Otaheite on June 3, 1769, was at her best; every prospect was pleasing. The lapping waves on the beach, the palm trees all round, the cheering power of winter's balmy breezes, the deep blue vault of heaven and the smiling sun all combined to inspire the workers with enthusiasm. Even the natives took a savage's interest in the day's proceedings and hung around while the telescopes were sweeping the heavens. The transit began in the morning.

The first contact occurred about 9.30 a.m. and by 3.30 p.m. the transit was completed.

The work was well done and the results obtained were entirely satisfactory. But Cook's cup of happiness was not without alloy. While the scientific staff were making observations on Venus, the sailors were worshipping at the shrine of the same deity. Freed for a while from strict supervision, the seamen saw and quickly took advantage of their opportunity; they broke into one of the storerooms and extracted a hundredweight of spike nails which they used as offerings to the Goddess of Love. By this escapade the sailors not only reduced the value of the spike nail as a medium for legitimate barter, but probably added their quota to the introduction of venereal diseases to the South Seas.

Otaheitan Medical Treatment.

I am tempted to introduce here the following story which, although the incident happened at Otaheite during Cook's third voyage, is of medical interest.

> The manner in which our Commander was freed from a rheumatic complaint that consisted of a pain extending from the hip to the foot, deserves to be recorded. Otoo's mother, his three sisters and eight other women went on board for the express purpose of undertaking the cure of the disorder. He accepted their friendly offer, had a bed spread for them on the cabin floor and submitted himself to their directions. Being desired to lay himself down amongst them, then as many of them as could get round him began to squeeze him with both hands from head to foot, but more particularly in the part where the pain was lodged, till they made his bones crack and his flesh became a perfect mummy.
>
> After undergoing this discipline about a quarter of an hour, he was glad to be released from the women. The operation, however, gave him immediate relief, so that he was encouraged to submit to another rubbing before he went to bed, the consequence of which was that he was tolerably easy all the succeeding night. His female physicians repeated the prescription the next morning and again in the evening, after which the pains were entirely removed and the cure was perfected. This

operation, which is called "romee" is universally practised among these islanders, being sometimes performed by men, but more generally by women (Kippis's "Captain Cook's Voyages").

Quite a modern method of treatment!

At Sea.

On July 13 the *Endeavour* weighed anchor and the English were tearfully farewelled by the natives; two of whom, Tupia and Tayeto, accompanied the ship.

After leaving Otaheite Cook spent a month exploring a group of islands, gems of the Western Pacific Ocean, which he called the Society Islands, and then sailed for New Zealand.

On August 25, 1769, the anniversary of the departure of the *Endeavour* from England, was celebrated by an onslaught on a Cheshire cheese and a cask of porter "which had been treasured up for this occasion." On August 30 one of the sailors —the boatswain's mate—died as the result of the festivities and rum.

New Zealand.

On October 6 land was sighted from the masthead of the *Endeavour* by Nicholas Young, a ship's boy who was on the lookout at the time. This land, at first though to be the *Terra Australis Incognita,* was in fact New Zealand.

On the eighth of the month Cook anchored in a bay at the entrance of a small river and landed; but "finding no rest for the sole of his foot" nor any means of obtaining water, he remained there only three days. To "this unfortunate and inhospitable place" Cook gave the name "Poverty Bay." "It lies," wrote Cook, "in latitude 38° 42′ south and longitude 181° 36′ west; it is in the form of a horse shoe and is known by an island lying close under the north-east point. The two points which form the entrance . . . lie a league and half or two leagues from each other, N.E. by E. and S.W. by W. The south-west point of the bay I named Young Nick's Head, after Nicholas Young, the boy who first saw the land."

The *Endeavour* remained in New Zealand waters till the end of March, 1770. During the stay Cook circumnavigated New Zealand, thoroughly charting and exploring this part of the world.

On April 1, 1770 the Endeavour took her departure from Cape Farewell.

Cook Has a Free Hand.

Lieutenant Cook had now completed all the work for which he had been commissioned; from this time on he had a free hand. The last clause in his "Instructions" was: "You are then to return to England by such route as you should think proper." The question for Cook to decide was: "What is the best route home?" Three routes were considered; one round Cape Horn; one round the Cape of Good Hope and one round the East Indies *viâ* the coast of New Holland. Cook had a strong desire to take the Cape Horn route and round up the lost continent, if such did exist; but that scheme was put out of court owing to the dirty condition of the ship's bottom and the dilapidated state of her sails and cordage. Moreover, the passage round the Horn would have had to be undertaken in the very depth of winter. The Cape of Good Hope route was eliminated for similar reasons and for the fact that that there was very little chance of making any discovery of moment by that route. The third route, therefore, was the one chosen. Having come to a decision Cook planned to sail westward till the eastern coast of New Holland was reached and then "to follow the direction of that coast to the northward and whatever other direction it might take us until we arrive at its northern extremity." Cook sailed west.

New Holland.

At six a.m. on April 20 Lieutenant Hicks reported to the Commander: "Land ahead." For this discovery Lieutenant Hicks had his name put on the Australian map; Cook called the place Point Hicks.[1]

The *Endeavour* now turned northward. She passed Bateman's Bay on April 22, Jervis Bay on April 26, Wollongong on April 28 and on April 29 at noon she entered Botany Bay or, as Cook designated the place, Stingray Harbour. "At daylight," wrote Cook, "we discovered a bay which appeared to be tolerably well sheltered from all winds, into which I resolved to go with the ship." The first Englishman to set foot on the eastern coast of Australia was Isaac Smith, a relative of Cook's wife. This youth had shipped on the *Endeavour* as able bodied seaman, was promoted to midshipman on May 23, 1770, and later in life attained the rank of admiral.

Stingray Harbour was surveyed, the surrounding country explored, natives were seen and Cook endeavoured to get into communication with them, but they were "inhospitable." The day after the *Endeavour* entered Botany Bay a seaman, named Forby Sutherland, died. This man has the distinction of being the first British subject to be buried on the eastern shores of Australia. His name is still with us. An entry in Cook's log tells us.

> Tuesday, May 1, 1770. Last night departed this life Forby Sutherland, seaman, who died of a consumption, and in the a.m. his body was entar'd ashore at the watering place; this circumstance occasioned my calling the so. point of the bay Sutherland's Point.

The *Endeavour* remained in Botany Bay till daybreak on May 7, when Cook continued his journey north. His passage along the Australian coast was not without adventure and incident. On June 11 Cook by a stroke of ill fortune put his little barque on a coral reef which penetrated her bottom and nearly caused her destruction. Fortunately, nay miraculously, when she was refloated a large piece of stone came away from the rock and remained as a plug for the hole. As the water, however, still came into the hold in considerable quantities and gave anxiety, it was decided on the advice of Mr. John Monkhouse, a midshipman, to "fother" the ship. After this operation the *Endeavour* was pumped dry and could be kept dry. "It is remarkable," wrote

[1] This point is in the region of Cape Everard.

Cook, "that the sea breeze which blew fresh almost every day was calm only when we were upon the rock."

On June 22 Cook had his ship beached in the Endeavour River in order to ascertain the extent of the damage she had sustained through striking the rock and to have repairs effected.

About this time or rather a little earlier, scurvy of a malignant type made its appearance among Cook's people. Tupia, the Otaheitan, although he had taken large quantities of lemon juice, was severely attacked. "He had livid spots on his legs and other indubitable testimonies that the disease had made a rapid progress notwithstanding all our remedies among which the bark had been liberally administered." Mr. Green, too, another victim, was desperately ill and his condition was the cause of grave anxiety. After being put on shore Tupia employed his time catching fish and lived entirely on what he caught; this brought him a considerable amount of relief.

The *Endeavour* did not get to sea again till August 6, when Cook found himself faced with a most difficult navigational problem owing to islands and shoals. But he succeeded although he had to "steer wholly in the dark without any manner of guide whatever." For weeks the leadsman had to be continuously in the chains when the ship had any sail on.

Batavia.

After leaving New Holland Cook coasted New Guinea and then went on to Batavia to have the ship overhauled.

The *Endeavour* reached Batavia on Thursday, October 11. This was fortunate for the ship but fatal for the people "whom disaster followed fast and followed faster." The examination of the ship's bottom revealed the alarming fact that had the *Endeavour* not reached Batavia, pestilential port though it was, when she did, it was certain that she could not have kept afloat much longer.

> The false bottom was all gone to within twenty feet of the stern post; the main keel was considerably injured in many places and a great quantity of the sheathing was torn off and several planks were much damaged; two of them and the half of a third under the main channel, near the keel, were for the length of six feet so worn that they were not above an eighth of an inch thick and here the worms had made their way right into the timbers; and yet in this condition she had sailed many hundred leagues, where navigation is as dangerous as in any part of the world. How much misery did we escape by being ignorant that so considerable a part of the bottom of the vessel was thinner than the sole of a shoe and that every life on board depended upon so slight and fragile a barrier between us and the unfathomable ocean.

After a residence of a few days at Batavia the ship's company one by one went down before a scourge which at that time was holding sway over the inhabitants of this unwholesome spot. It seemed as though these unfortunate voyagers had escaped the perils of the sea only to be destroyed by the pestilence ashore. Tupia who was still suffering from the effects of scurvy, grew worse; Tayeto the other Otaheitan, was seized with "an inflammation of the lungs"; Mr. Banks and Dr. Solander were "attacked by fevers"; others followed in quick succession till the whole of the ship's complement were with one exception under the heavy hand of disease. The one exception was the ancient sailmaker, who was drunk from the day the ship arrived at Batavia till the day she left. He was so jovial in an alcoholic kind of way that he was quite oblivious to the tragedy that was being enacted around him. With Burns slightly altered we may say of this bibulous old man:

> Kings may be blest, but sails was glorious;
> And o'er the ills of life victorious.

On November 5, 1770, death scored his first victory; William Brougham Monkhouse died on that date. Cook records his death with these words:

> Mr. Monkhouse, our surgeon, a sensible skilful man, fell the first sacrifice to this fatal country, a loss which was greatly aggravated by our situation.

Besides the surgeon, Tupia, Tayeto, three seamen and Mr. Green's servant were all buried at Batavia.

> All but Tupia fell a sacrifice to the unwholesome, stagnant putrid air of the country.

Homeward Bound.

The *Endeavour* thoroughly repaired and stores, water *et cetera et cetera* having been taken on board, Cook weighed anchor and set sail on December 26, 1770. Did the sailormen when the anchor was heaved a-weigh sing in unison with the crepitant noise of the chain as link by link it came aboard that most tuneful of all chanties, "Homeward Bound!"?

> We're homeward bound, Oh that joyful sound!
> Good bye fare ye well! good bye fare ye well!!
> We're homeward bound to London town;
> Hurrah! my lads we're homeward bound.
>
> When we arrive at the East India docks,
> Good bye fare ye well, good bye fare ye well!!
> All our friends will come down in flocks,
> Hurrah! my lads we're homeward bound.

Perhaps they did not sing that song, but this one thing is certain the crew of the *Endeavour* never brought up the anchor with greater zest than they did on Boxing Day morning at Batavia in 1770. As the ship passed out of the harbour, the *Elgin*, Indiaman, saluted with cheers and thirteen guns and the garrison did likewise with fourteen guns. This compliment was reciprocated and then with sails set and a light south-west breeze blowing the *Endeavour* commenced her voyage homeward, *viâ* the Cape of Good Hope. But the *Endeavour* with forty invalids on board was not a clean ship and many of those who longed for England, home and beauty were destined never to have that longing realized. In the space of six weeks twenty-three deaths occurred. The casualties included Mr. Herman Sporing, assistant, and Mr. Sydney Parkinson, natural history painter, both members of Mr. Banks's staff; Corporal Trusslove of the marines; Mr. Green, the astronomer; the carpenter; the carpenter's mate; Mr. Monkhouse, the midshipman who

fothered the *Endeavour* off the coast of Australia; Mr. John Bootie, another midshipman; the sailmaker's assistant; the cook; two of the carpenter's crew; nine seamen and finally John Ravenhill, the inebriate old sailmaker who had such a jolly time at Batavia. Surely this old man deserves a special valediction. What a picturesque figure he must have presented! He was between seventy and eighty years of age; had sailed the ocean for many years, probably from boyhood and had grown rough, tough and corrugated owing to the ravages of time and the effects of the salt sea breeze. At last he has reached his journey's end and is honoured with what he had probably most desired, a sailor's grave.

A plunge and a splash and all was o'er,
Then the waves rolled on as they'd rolled before;
While many a prayer hallowed the wave
As he sank beneath a sailor's grave.

Let him have the sailor's good bye:

John Ravenhill, so long! So long, John Ravenhill!

With the advent of the salubrious south-east trade winds the health of the Endeavourers began to improve.

Cape of Good Hope.

On Monday, March 15, 1771, about 10 a.m. the *Endeavour* came to an anchor off the Cape of Good Hope "in seven fathom with an oozy bottom." The invalids were taken to a house ashore where they were lodged and boarded at the rate of two shillings a head per day. After a month's sojourn in South Africa, during which the ship was refitted and stores procured, Cook once more turned his face towards "the land of his sires." April 14 found the *Endeavour* at sea again.

St. Helena.

St. Helena was reached on May 1; here a four days' respite was greatly appreciated.

The Last Lap.

The concluding lap of the voyage to the home port was commenced in company with the *Portland*, man of war, and twelve Indiamen. Owing to the dirty state of her bottom and the rotten condition of her sails and gear, the *Endeavour* could not show such a clean pair of heels as the other ships which slowly drew away from her and were all out of sight by May 23. Lieutenant Hicks, the last victim of disease died just as the hindmost ship disappeared over the horizon; he was buried at sea the same day.

On June 10 Nicholas Young whose keen eyes got the first glimpse of New Zealand, once more demonstrated the acuity of his vision by discovering land; on this occasion it was the Lizard.

On June 11 the *Endeavour* ran up the Channel.

On June 12 at 6 a.m. she passed Beachy Head; at noon she was abreast of Dover; at 3 p.m. she came to an anchor in the Downs and Cook went ashore at Deal. Thus Lieutenant James Cook completed his first voyage which began on August 26, 1768, and ended June 12, 1771.

James Cook was a great sailor and a superb navigator. It was owing to his youthful experiences before the mast and his later scientific training behind it that he knew the art of seamanship and the science of navigation from "clew to earing" and had a most comprehensive grasp, theoretical and practical, of the naval profession. He lived in the romantic days of sail before the coming of steamships, oil ships and turbines which, although their advent was inevitable with the advance of knowledge, have made the great ocean highways common place. Gone are Cook and his generation. Gone too are the sailing ship and that peculiar creature of the deep sea, the "shellback"—that cunning craftsman who could hand, reef and steer and successfully meet any or every emergency with a smile....or a growl. Gone they are and while we of the older generation cannot but regret their passing, we have yet cause for rejoicing in the fact that the same breed of man is with us still. May that breed last for ever!

Conclusion.

Hear the conclusion of the whole matter, the end for which this essay was begun.

The primary object of this paper is to see if the names of William Brougham Monkhouse and William Perry, the surgeon and surgeon's mate of the *Endeavour*, cannot in some way or other be perpetuated by the medical profession in New South Wales. They were the first British surgeons to reach the eastern shores of Australia and they landed practically at our doors. They received their appointments on the *Endeavour*, we have every reason to suppose, because they were specially fitted by training and experience for the expedition. That they did their work well is demonstrated by the fact that, though scurvy did make its appearance amongst the people on the *Endeavour*—even Mr. Perry himself was a victim—there was only one fatality from that disease. Curiously enough no credit has been given to the surgeons or the medical profession for this fact. Reviewing the various accounts of Cook's voyages, we find that in the first voyage the Commander and Mr. Banks get all the kudos for the victory over scurvy; while in the second the Commander alone reaps all the glory.[1] Listen to a few quotations:

On January 21st they started on their long voyage to Otaheite (Tahiti).

On April 4th they were abreast of Lagoon Island, and Banks gives an account of the lemon juice preparation

[1] It is not intended to infer that this was a decisive victory and that scurvy was once and for all "down and out." Scurvy has raised its loathsome head and showed fight time and again since Cook's first voyage. During the second voyage, the enemy had as victims at one period twenty-five *per centum* of the crew of the *Adventure*. "Tuesday, July 29, 1773. On 29th I sent on board the *Adventure* to enquire into the state of her crew, having heard they were sickly, and this I now found was but too true. Her cook was dead and about twenty of her best men were down in the scurvy and flux. At this time we had only three men on the sick list and only one of them attacked with the scurvy. Several more, however, began to show symptoms of it, and were accordingly put on wort, marmalade of carrots, rob of lemons and oranges." ("A Voyage Towards the South Pole," Volume I. pages 136 and 137). Even now that hideous foe, scurvy, is kept captive only by dietetic and hygienic bars.

he had brought to ward off scurvy. During the whole voyage there was very little scurvy and the greatest credit is due to Captain Cook (in which he was doubtless well supported by Banks) for the preventive arrangements which brought about so excellent a result. ("Sir Joseph Banks," by J. H. Maiden).

Mr. Banks got his information and supplies from Nathaniel Hulme, Esq., M.D. (*vide* Appendix B) and Captain Cook got specific instructions from the Admiralty to direct the surgeons to carry out Dr. MacBride's method of treating scurvy.

He (Cook) on his second voyage was going to prove the best physician ever known in the prevention of scurvy. ("Captain Cook," by Sir Walter Besant).

The credit for the wonderful results obtained on the second voyage should go chiefly to Mr. James Patten, the Surgeon of the *Resolution*.

Cook had not discovered the Southern Continent, but he discovered something far more valuable. He had discovered that by the use of antiscorbutics, by careful airing of the ship, by scrupulous attention to cleanliness, a very long voyage might be made through all variations of climates without injury to health. ("The Discovery of Australia," by Professor Wood).

Did Captain Cook really make this discovery? James Lind, M.D., Nathaniel Hulme, M.D., David MacBride, M.D., and others had already done excellent work on the pathology, prevention and cure of scurvy. Moreover, the antiscorbutic properties of lemon juice have been known since the sixteenth century.

What enquiry can be so useful as that which hath for its object the saving the lives of men? and when shall we find one more successful than that before us? Here are no vain boastings of the Empiric, nor ingenious and delusive theories of the dogmatist; but a concise and artless and an incontested relation of the means by which, under Divine favour, Captain Cook, with a company of a hundred and eighteen men, performed a voyage of three years and eighteen days, throughout all the climates, from fifty-two degrees north to seventy-one degrees south, with the loss of only one man by sickness —and that death was from a consumption terminating in a dropsy, not from the scurvy. If Rome decreed the civic crown to him who saved the life of a single citizen, what wreaths are due to that man, who, having himself saved many lives, perpetuates in your transactions the means by which Britain may now, on the most distant voyages, preserve numbers of her intrepid sons, her mariners; who, braving every danger, have so liberally contributed to the fame, to the opulence, and to the maritime empire of their country.[1] (Sir John Pringle's eulogy of Captain Cook).

These quotations make it clear that the work of the profession has been absolutely ignored by authors who have written on the life and work of Captain Cook. Captain Cook was himself too big a man to lay claim to any honour to which he was not justly entitled and I believe, had he been present when Sir John made that eulogistic speech, that in reply he would have qualified the statements made by the President of the Royal Society. Cook certainly was not lavish in his praises of his subordinates, but in a letter to Secretary Stephens from Table Bay, Cape of Good Hope, dated March 22, 1775, he makes use of these words:

In justice to my officers and crew, I must say they have gone through the dangers and fatigues of the voyage with the utmost constancy and cheerfulness; this together with the great skill, care and attention of Mr. Patten, the surgeon, has not a little contributed to that uninterrupted good state of health we have all along enjoyed, for it cannot be said that we have lost one man by sickness since we left England.[2]

Captain Cook, after his second voyage was elected a fellow of the Royal Society and was awarded the Copley medal, the blue ribbon of the scientific world. Unhappily he never received that coveted prize, for when the presentation was made he was at sea on his last and fatal voyage. We can admire Captain Cook and give him unstinted praise for his great achievements as a navigator, marine surveyor, astronomer and administrator; but he was not a doctor. I believe I am correct in saying that the credit for the remarkably good results obtained in the treatment of scurvy on Captain Cook's ships was due directly and indirectly to members of our profession. Of the surgeons, Monkhouse and Perry, we know practically nothing. A few scattered references to them are met with in the accounts of Cook's voyages, but nothing more. When the epidemic at Batavia overtook the people on the *Endeavour,* William Brougham Monkhouse was the first victim to go west. He died in the execution of his duty on November 5, 1770—a glorious end. It was doubtless this fact that practically no mention is made of the names and work of the surgeons on the *Endeavour,* that led the late Dr. Hankins into the error of thinking that Captain Cook carried no surgeon. In his review of the early Medical History of Australia (*vide The Australasian Medical Gazette,* April, 1891, page 194 *et sequens*) Dr. Hankins informs us:

The wonderful immunity from sickness experienced by the crew of the *Endeavour* is traceable in a great measure to the intimacy existing between Captain Cook and Dr. Pringle, which renders it probable that the latter had communicated some valuable suggestions on this subject to his intelligent friend; and no pupil of the School of Hygiene has ever proved more capable of rendering its rules to practice. . . . Captain Cook, then, carried, no surgeon!

Many of those who sailed in the *Endeavour* have had their names immortalized by Captain Cook and others. Nicholas Young, the ship's boy, who first sighted New Zealand, had his name put on the map of the Dominion; Lieutenant Hicks had his given to an Australian Cape; while the name of Forby Sutherland will last for all time as that of the first British subject to be buried in this part of the world. Who does not know Point Sutherland, Botany Bay? We could mention too the immortal names of Cook, Banks, Solander, Edgecumbe, the *Endeavour et cetera, et cetera,* but space will not permit us to expand indefinitely. All these names are perpetuated in some or other way; but those of Monkhouse and Perry, the surgeons of the *Endeavour,* have gone into oblivion.

Would it not be a gracious act at this, the first meeting of the Literary and Historical Section of the New South Wales Branch of the British Medical Association, to start a movement to have the names of Monkhouse and Perry, the Australian medical

[1] The statistics of the *Resolution* only are referred to by Sir John Pringle.

[2] The *Resolution's* statistics only.

harbingers perpetuated? I think it would. As the Royal Australian Historical Society is punctuating the State of New South Wales with memorials of persons and places connected with the early history of Australia—even the site of the first hospital has been commemorated by that Society—so should we, brothers of the same craft, perpetuate the names of our pioneers, but especially those of William Brougham Monkhouse and William Perry. It is our prerogative and it should be our pride to do so. Let us see to it that we do this work which is certainly ours, and not allow the honour of doing it to go elsewhere.

Appendix A.

Appendix A consists of a review of the casualties that occurred during the voyage of the *Endeavour*, the means adopted to prevent scurvy and the methods of treatment when that disease did appear.

The voyage began on August 26, 1768, and ended on June 12, 1771. The *Endeavour* was away from England for two years, nine months and seventeen days. When Cook sailed from England the barque carried ninety-eight souls; of these only sixty-one returned in her. There were thirty-seven deaths among those who sailed from the home land; or a death rate of 37.7%. If the deaths of the two Otaheitans be included in the casualty list the death rate rises to 39%.

Mr. Banks's staff was particularly unfortunate; six out of the nine men whom he engaged for the voyage, died abroad.

A tabulated list of the thirty-eight casualties is as follows:

Cause of Death.	Place of Death.	The number of Deaths.
Drowning	Madeira	1
Drowning	Rio de Janiero	1
Frozen to death ..	Tierra del Fuego	2
Fits and bilious complaint	Otaheite	1
"Consumption" ...	Botany Bay	1
Scurvy	Batavia	1
Slow fever and flux	Batavia	6
Slow fever and flux	At sea	23
"Consumption" ...	At sea	1
Alcoholism[1]	At sea	2

This list includes the deaths of the two Otaheitans; they both died at Batavia. Owing to the absence of precise information it is impossible here to discuss the diagnosis of that disease or those diseases which played such havoc with the people on the *Endeavour* at Batavia and later at sea.

The diagnoses also of "fits and bilious complaint" and "consumption" are too vague to give us any reliable information. Tupia died of scurvy. Mr. Green was a victim of the same disease when the *Endeavour* was off the coast of New Holland. How far scurvy contributed to the death of the astronomer it is difficult to conjecture.

Surgeon Perry has left us a report in which he gives an account of the means used in the prevention and treatment of old-time-sailors' arch enemy. "Unfortunately Mr. Perry's report bears no date; it was evidently written in June or July, 1771" (*Historical Records of New South Wales*, Volume I., page 339). The report opens with these words:

> The sanguine and well-grounded expectations of the certain efficiency the wort possesses to cure the sea scurvy and the very great probability of that distemper raging at some time or other in the course of a long voyage, induced, I apprehend, the Rt. Honour'ble the Lords Commissioners of the Admiralty to send out a quantity of malt in the *Endeavour*, as well to determine and fix its character in that respect as through an humane and tender care for the preservation of the crew.

The dietetic and hygienic means used to prevent scurvy are then enumerated. Sauerkraut, mustard, vinegar, wheat, inspissated orange and lemon juices, portable soup, sugar, molasses and vegetables were all used constantly or occasionally with excellent results. Perry says: "These were of such infinite value that the use of malt was, with respect to necessity, almost entirely precluded." Cold baths were encouraged. The quantity of the salt beef and pork issued was cut down and the sailors were forbidden to mix salt beef fat with their flour, raisins being used as a substitute.[1] Butter and cheese were eliminated from the dietary. The wort was first prepared on October 23, 1768, and given as prophylactic to the men who were ill with or convalescent from a "bilious disorder." "A quart a day was given to each of the cooks, who were supposed more obnoxious to scurvy from their duty ab't the fire." The *Endeavour* reached Rio de Janiero free from scurvy. At Tierra del Fuego wild celery which has antiscorbutic properties, was collected and used in the dietary. The first scurvy patient was Richard Hutchins, "age twenty-eight, of active, lively disposition and florid complexion." He was laid low on March 14, 1769, at sea between Tierra del Fuego and Otaheite. His treatment was wort, portable soup and flour given in lieu of salt meat. After Hutchins was attacked, the wort was administered to the invalids, the older people, the cooks and "others of the men who were suspected of lax solids and more dissolv'd state of the blood."

The other victims at this time were William Wiltshire, a marine, aged twenty-seven; Samuel Jones, seaman, aged twenty-six, and William Perry, surgeon's mate. Mr. Perry became affected on April 3, 1769. Describing his own case Mr. Perry tells us:

> I took a quart of the wort for some days before an unusual languor and lazyness had infested me; no posture was so easy as lying down and a swelling of a phlegmonoid type had appeared on my left leg. The integuments were discoloured from the calf downwards, the apex of the tumour painful to the touch, but the rest hardly at all. To this I applied a discutient plaister and kept from lying down as much as possible. The wort griped me at first, but not violently. On the 6th I first observed an amendment in the aspect of the tumour, the discolouration more circumscribed and the apex falling. My spts [spirits] were indisputably more alert. From this day I mended fast and on the 12th left off the wort, being within sight of our port at Otaheite. Where the tumour had been was now a circle of deep blue, and round that a light tinge of yellow.

Mr. Perry tells us also that besides these four patients of whom he was one, there were only five more victims of scurvy; two cases occurred while the ship was on the coast of New Zealand and three while she was in port at New Holland. He attributes the good health of the crew to the fact that from March 14, 1769, the wort was used constantly as part of the diet while at sea. The concluding words of the surgeon's report are:

> From what I have seen the wort perform, from its mode of operation, from Mr. MacBride's reasonings I shall not hesitate a moment to declare my opinion, viz.: that the malt is the best medicine I know, the inspissated orange and lemon juices not even excepted.

Contemplating the medical history of the voyage we can declare that the MacBride method of preventing and curing scurvy was a complete success. Comparing the first and second voyages from the standpoint of scurvy there is very little to choose between them. The death rate from scurvy on the first voyage, if we agree that Tupia's death was from that cause, was only 1%. But the number

[1] The sailmaker's death was not due to alcoholism.

[1] Was this the origin of "plum duff?" I believe it was.

of men *per centum* attacked by scurvy was greater on the second voyage than on the first.[1]

Appendix B.

Appendix B consists of a letter received by Joseph Banks, Esq., F.R.S., from Nathaniel Hulme, Esq., M.D., shortly before the *Endeavour* left England in 1768. The contents of the letter speak for themselves.

Sir:

The vessels containing the orange and lemon juice which were sent to you by the order of Doctor Fothergill, were to be marked that you might know their contents. But lest in the hurry of sending them that circumstance should have been neglected, I will take the liberty to explain them. No. 1: The case contains six gallons of lemon juice evaporated down to less than two gallons. No. 2: The large cask contains seven gallons of orange juice and one gallon of brandy. No. 3: The small cask contains five quarts of lemon juice and one of brandy. When you come to make use of the juice which is in the casks, do not open the bung hole, but draw it off at the end of the cask by means of a wooden cork, and make a vent hole at the top of the cask with a peg in it, and always observe this method when you draw off your juice which you keep in the casks. You may find the proper directions for the preservation of the juice in the casks in the "Proposal of Preventing the Scurvy," pages 67, 82, 83. It would not be amiss, then, if you were to take out with you several wooden corks, least any should be lost or broken: and perhaps 2 or 3 strong iron-bound casks, holding ten gallons apiece might be very useful for taking in a quantity of orange, lemon or lime juice when you touch at any place abroad where these fruits grow. For directions on this head see the "Proposal," page 82. Besides the juices, I would recommend to you to carry out a quantity of molasses and two or three pounds of the best Chio and Strasburgh turpentine in order to brew beer with, for your daily drink, when your water becomes bad. The rules for brewing this kind of beer you will find in the appendix of the "Proposal." In this case you will want yeast, and the manner of preserving this at sea you may also meet with in the appendix P. .... So small a quantity of molasses as two gallons, or two gallons and a half are said to be sufficient for making a hogshead of tolerably good beer. And this method of brewing beer at sea will be particularly useful in case you should have stinking water on board, for I find *by experience* that the smell of stinking water will be entirely destroyed by the process of fermentation.

I sincerely wish you and your Companions a most prosperous voyage and a safe return to old England, loaded with all the honours you so justly deserve. And am,

Sir,

Your most humble Servant,

Hatton Gardens. N. HULME.

Reports of Cases.

CASE OF PREGNANCY AT FULL TERM IN RUDIMENTARY HORN OF THE UTERUS.[2]

By CONSTANCE E. D'ARCY, M.B., Ch.M. (Sydney),
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Clinical History.

E.E., AGED thirty-five years, was admitted to the Royal Hospital for Women on December 24, 1924. She had no children, but had had one miscarriage at five months, fifteen months previously. Her last menstrual period had occurred on February 7, 1924, and the expected date of confinement was November 14, 1924. Three weeks before admission slight bleeding commenced and it had continued on and off until the date of admission. There had been no pain, either during the early part of pregnancy or when the bleeding commenced. No fœtal movements had been felt for three weeks. She had a feeling of malaise with vomiting for twenty-four hours before admission.

On examination her temperature and pulse were normal. A mass which felt like the pregnant uterus stretched from the pelvis to 23.75 centimetres (nine and a half inches) above the *symphysis pubis*. The mass could be moved from side to side as freely as a normal pregnant uterus. Textbook descriptions give as points for differential diagnosis: (i.) Free movements of the uterus from side to side in normal pregnancy as against fixation of ectopic pregnancy on account of adhesions; (ii.) the round ligaments may be felt in normal pregnancy; (iii.) the fœtal parts are felt more easily in ectopic than in normal pregnancy. In the case under review the fœtal parts could not be easily made out, only a general impression of a head presentation and no round ligaments could be felt. The abdominal walls were tense which interfered with palpation. No fœtal heart sounds were heard. On vaginal examination the cervix was felt high up and slightly to the right. A point in differential diagnosis is that the cervix is larger and softer in normal than in ectopic pregnancy. This feature had been eliminated by the fact that the cervix had been packed with gauze before admission. The presenting part had not engaged in the pelvis and on the right of the large presenting part there was felt a small, firm mass which was at first mistaken for a fibroid. Professor Windeyer saw the patient in consultation and he suggested the diagnosis of ectopic pregnancy and the passing of a sound and dilatation of the cervix under an anæsthetic to confirm the diagnosis. Accordingly on December 31, 1924, under ether anæsthesia a sound was carefully passed into the small mass on the right which was thus proved to be the uterus. The length of the uterus was 7.5 centimetres (three and a half inches). Hegar's dilators were passed and the finger entering the uterus found it to be empty.

On January 2, 1925, the abdomen was opened by a midline incision. The sac containing the fœtus was seen with the omentum spread out and adherent to it. There were no adhesions to the abdominal wall and there was no sign of recent or old hæmorrhage in the abdominal cavity. This accounted for the absence of pain during the early part of pregnancy, a common symptom due to rupture or tubal abortion. The omentum was separated and on an attempt being made to deliver the sac the membranes ruptured; the peritoneal cavity had been previously protected by pads. A full term fœtus was delivered. It was not deformed, but already showed signs of maceration. The surface of the fœtus was covered with yellow granules of a sebaceous material and it weighed 3.4 kilograms (seven and a half pounds) and measured fifty-five centimetres (twenty-two inches) in length. The sac was then delivered and it was seen that the pregnancy had started in a rudimentary horn of the uterus attached to the left cornu by a fibrous band as thick as the little finger. The round ligament was inserted into the sac and not into the uterine cornu. The placenta was attached to the much stretched rudimentary horn and along the top of the broad ligament as far as the infundibulo-pelvic fold. The layers of the broad ligament had not been separated by the placenta, so that the problem of removing the placenta was easy. The sac and placenta were removed *en masse* like an ovarian cyst on a wide pedicle. The infundibulo-pelvic fold was ligated and divided, the peritoneum was incised and reflected on each side, the large vessels entering the site of insertion of the placenta were picked up and cut and the attachment to the uterine cornu was ligated and separated. The vessels at this area were very large, as thick as two fingers. The peritoneal edges were oversewn. On examination of the other cornu of the uterus another rudimentary horn was found, it was the size of a small nut attached to the right cornu. The right round ligament was found to be attached to the rudimentary horn similarly to the left side.

[1] In this last sentence reference is made to the scurvy cases of the two ships under Captain Cook's command, not to those of one ship only. It would be interesting to know the number of deaths due to scurvy on the *Adventure*.

[2] Read at a meeting of the New South Wales Branch of the British Medical Association on July 9, 1925.

According to Munro Kerr the band connecting the rudimentary horn is usually attached to the normal horn about the level of the internal *os*. In this case the attaching bands were at the level of the uterine cornua in a uterus which had otherwise an apparently normal shape. The band attaching the impregnated horn was apparently solid, but it may be that there had been a lumen which had undergone secondary obliteration. In eighty-two cases collected by Kerr the band was solid in fifty-seven or 78%; it contained a lumen in eleven or 15% and in five or 6.5% the lumen had undergone obliteration. This raises the question of the method of fertilization. It is argued that if there is no lumen in the connecting band, the spermatozoa must come through the opposite tube. In this case, however, there was a rudimentary horn on each side, so that one is forced to the conclusion that the lumen had been obliterated. No sign of ovarian tissue could be made out by the naked eye on the left side. The sequence of events had apparently been impregnation in the rudimentary horn, then a partial tubal abortion without hæmorrhage or rupture of the sac. As the sac had gone on developing the ovary had become spread out upon it, as in a tubo-ovarian inflammatory mass, until it was no longer recognizable. The abdomen was closed in the usual way and the patient made an uneventful recovery.

Comment.

The question arises as to what is the optimum time for operation in cases of advanced ectopic pregnancy. Munro Kerr in his "Clinical and Operative Gynæcology" says:

> Before considering details regarding the operative treatment of such cases we must consider the question as to whether or not it is ever advisable to delay operating for the sake of the child. Now, it is never advisable to delay operations in case of ectopic pregnancy recognized in early weeks, because tubal abortion or rupture is almost sure to occur. But in the later weeks rupture very rarely occurs; consequently it is quite permissible to delay, provided the patient is placed under such circumstances that immediate operation can be performed should this become necessary.

A case was reported by Spencer, however, of a woman with a seven and a half months' ectopic pregnancy who died as a result of sudden rupture of the gestation sac while she was waiting in hospital. It would seem as if a sword were hanging over the head of an unfortunate woman whilst she remains in this condition. The next question is whether the fœtus should be allowed to die before operation and if so how long after its death should operation be performed. It is claimed that thrombosis occurs in the vessels of a dead placenta and that it is then easily removed, whereas the hæmorrhage from separation of a living placenta may be uncontrollable. It is argued that the fœtus in these cases is frequently the subject of maldevelopment and malformation on account of its surroundings and that on this account its life need not be seriously considered. In a series collected by Settner of a hundred and twenty-two fœtuses seventeen were malformed and in five instances the malformation played some part in causing the death of the fœtus. Amongst seventy of the fœtuses fourteen were of normal size, thirty-seven were less well developed and nineteen were larger than the normal size for the same period of intrauterine development. Of the one hundred and twenty-one fœtuses born alive, fifty-nine died within the first few weeks and sixty-three survived for a longer period than this. Winckel states that 50% of extrauterine fœtuses are malformed and in thirteen fœtuses seen by him definite malformation was present. The waiting policy adds the risk of septic infection to that of sudden rupture and hæmorrhage. Whitridge Williams advises against waiting for viability except in exceptional cases when the risk is fully understood and accepted by all concerned. He considers the condition much more favourable when the fœtus is dead and advises waiting for six or eight weeks after fœtal death in order to permit the obliteration of the maternal blood spaces in the placenta. He quotes Lusk, however, as making an earnest plea for prompt operation in all cases on account of the risk of infection, Lusk having supported his contention by a long array of statistics. In the case now reported by me there was no sign of thrombosis in the maternal blood spaces one month after the death of the fœtus.

A. C. Beck collected cases reported in the literature and sent a *questionnaire* to two hundred obstetricians. From his study he concludes: (i.) The best time for operation is during the sixth or seventh month. (ii.) The added risk in waiting for a well developed child is slight up to the thirty-ninth week. (iii.) The danger of a catastrophe is sufficiently great in the last two weeks to warrant interference before this period is reached.

In the textbook "Diseases of Women," edited by Berkeley, Andrews and Fairbairn, the opinion is given that:

> Increased experience has proved conclusively that the extra risk of the occurrence of infection entailed by waiting more than counterbalances the possible advantages of the occurrence of thrombosis. Opinion of late has veered towards immediate operation.

All authors of textbooks seem to be agreed that no definite technique can be formulated for cases of advanced ectopic pregnancy, since each case is a law unto itself. There seems to be a general concurrence that the best site for incision is the outer border of the rectus on the side of the gestation sac, since many placentæ are found under and between the layers of the broad ligament. It is held that in such cases the fœtus and placenta can be removed extraperitoneally.

The greatest difficulty, is of course, encountered in dealing with the placenta. In the case of a living placenta it has been recommended to marsupialize the sac, the placenta being left behind. Sittner collected one hundred and sixty-four cases of cœliotomy in advanced extrauterine pregnancy with a living child covering a period of twenty years. The mortality was 30.7% after marsupializing the sac and leaving the placenta behind and 6.8% after removal of the placenta and securing the blood vessels. During the years 1901 to 1906 marsupialization was attended by a mortality of 40%, direct removal of the placenta with ligature of the blood vessels by a mortality of 12.5%. He also showed that when the sac and placenta were removed the mortality was 5.7% as against a mortality of 30% when the sac was left behind after removal of the placenta. Beck advocated leaving the placenta *in situ* and closing the abdominal wall without drainage. He depended upon the absorptive power of the peritoneum. To test this he placed three-fifths of a thirty gramme (five hundred grain) placenta removed by Cæsarean section in the abdomen of a dog. The animal recovered. Two months later its abdomen was opened and no trace of placenta was found. In Beck's statistics there were twelve cases in which this procedure was adopted from 1890 to 1919; four patients died, a mortality of 32.3%. During this same period marsupialization was practised in fifty-two women, twenty-two of whom died (38.7%). If the operator decides to remove the placenta and an oozing surface remains, large gauze strips are used as packing and it is generally advised that these strips should be drawn out through an opening in Douglas's pouch into the vagina.

In conclusion it is necessary to draw attention to the comparative rarity of these cases especially in recent years as a result of the improvement in gynæcological diagnosis. The patient whose history is here reported, furnished the first instance of full-time ectopic pregnancy operated on in the history of this hospital. One other case occurred in my service in this hospital. In that case the woman had undergone spurious labour fourteen years previously. No subsequent pregnancy had occurred. She had gradually become wasted and ill. At the time of admission she was almost moribund and was discharging fœtal bones *per rectum*, the pelvis was blocked by a large cellulitic swelling with thrombosis of the pelvic vessels and she died as a result of generalized septic infection.

Besides the authors already quoted reference has also been made to Eden and Lockyer's "New System of Gynæcology" and Edward A. Schumann's "Extrauterine Pregnancy."

The Medical Journal of Australia

SATURDAY, SEPTEMBER 19, 1925.

A Landmark in the History of the Association.

It is contrary to our usual practice to deal with information that has appeared in *The British Medical Journal*, because every member of the British Medical Association in the Commonwealth receives both *The British Medical Journal* and The Medical Journal of Australia. The opening of the new home of the British Medical Association is so important and exceptional an occasion that a departure from the usual custom is justified and imperative. Moreover the editor of *The British Medical Journal* has generously forwarded to this journal the block used in the Special Commemorative Number on July 18, 1925, illustrating the President's chair presented by Dr. W. N. Robertson, C.B.E., on behalf of the Branches of the British Medical Association in Australia. This illustration appears on another page in this issue. It is unnecessary to iterate the story of Tavistock House; that has been told most admirably in the pages of *The British Medical Journal*. Everyone who has seen this wonderful house in the form given to it by Sir Edwin Lutyens, speaks or writes with great enthusiasm and deep admiration of the refined and picturesque building that is so admirably adapted to its present purpose. During the past thirty-nine years the Association and journal have had their home at the corner of Agar Street and the Strand. During this long period the affairs of the Association have gradually improved and its property has become more and more valuable. All those who worked in the first building with its entrance in the Strand and who witnessed the rebuilding on an extended site in 1907-1908, recognize the significance of the association of place with achievement. The first house in the Strand was doubtless by no means ideal for its many and important functions. The offices of the journal left much to be desired, but a great deal was accomplished within the walls of that building and the workers learned to regard it with a peculiar affection. When the new building was erected in 1908, involving a temporary residence of the Association and the journal in Catherine Street, Covent Garden, the house gained an extra notoriety on account of the controversy that appeared in the daily press concerning the propriety of the statuary that adorned its Agar Street and Strand frontages. The members of the Association were justly proud of their valuable property that appeared to be both convenient for its many uses and pleasant to the eye. The Council room, the library, the apartments of the Medical Secretary's department and the journal offices soon became familiar to very many members of the Association and will not readily be forgotten. These humbler homes of the Association are now but memories; the next generation will regard them as mere incidents in the growth and development of a great organization. The new home, with its fascinating history and its magnificent proportions, eclipses all that the past has to offer.

It is unnecessary for us to repeat the details of the pageant when His Grace the Archbishop of Canterbury dedicated the Gates of Remembrance of the brave who fell in the Great War, and when His Majesty the King, accompanied by Her Majesty the Queen, performed the ceremony of opening the new house. That is also faithfully recorded in the pages of *The British Medical Journal*. In the evening of the same day, July 13, 1925, a vast concourse assembled in the Great Hall. It was then that Dr. W. N. Robertson, Vice-Chairman of the Federal Committee of the British Medical Association in Australia, presented a handsome chair as a gift from the Australian Branches and Dr. Stoddart Barr presented a chairman's mallet as a gift from the Tasmanian Branch. The chair and the mallet are symbols of the bond of kinship. The legend stamped in gold lettering on the back of the chair—

British Medical Association
President's Chair
Presented by the Branches of the British
Medical Association in Australia
to the
Parent Association in England
in Token of
Kinship, Loyalty and Goodwill
to Celebrate the Entry of the Association into
its New House
Tavistock Square, London
July, 1925
". . . ties which, though light as air, are strong as links of iron"

could not have been better chosen. Today the British Medical Association is stronger, more important and more firmly established in Australia than ever. No voices are now heard advocating the establishment of an Australian medical association; no one wishes to weaken the bond. Just as the Empire encircles the earth and arouses pride in the breast of each and every citizen, the ideals of Charles Hastings have been cherished by British subjects through ninety-three years and awaken the pride of each member of the British Medical Association in the Commonwealth.

Current Comment.

X RAY THERAPY IN THE TREATMENT OF WHOOPING COUGH.

In whooping cough as in many other conditions the absence of a specific remedy and the relatively unsatisfactory nature of the results obtained by treatment are made evident by the multiplicity of the therapeutic measures that are undertaken in connexion with it. Their number is legion. The oral, rectal and hypodermic administration of drugs has been exploited and claims have been made in regard to the excellence of the results achieved by many of them. The use of vaccines has been found helpful. Southby reported success by this method in this journal in July of this year. He concluded that vaccine treatment definitely improves the condition of the patient in that the paroxysms are lessened in frequency and severity. At the same time he expressed the opinion that it had very little effect on the total duration of the disease, except in young babies when it was slightly shortened. In 1923 and 1924 various workers in America claimed to have used X rays with success in the treatment of whooping cough. Among these workers were Leonard, Bowditch and Smith. Radiotherapy, however, has not been universally adopted in the treatment of this disease.

Dr. L. W. Smith and eight coworkers have recently made a report on the treatment by X rays of eight hundred and fifty patients suffering from whooping cough. In an extremely interesting paper read before the Section on Diseases of Children at the Seventy-Sixth Annual Session of the American Medical Association, they touch on important points to which reference should be made.[1] In the first place they state that while whooping cough ordinarily confers a permanent immunity, they have found three undoubted instances in which a second infection occurred. Of the eight hundred and fifty patients seven hundred and fifty or 88.2% were under seven years of age and two hundred and sixty or 30.5% of this group were infants under two years of age. Ten of the patients were under two months of age. It is commonly held that the infectivity of pertussis is limited to the catarrhal stage and that it diminishes very rapidly after the commencement of the paroxysmal period. Dr. Smith's studies have confirmed this. No cultures of the *Bacillus pertussis* were obtained after "the second week of whooping" and this represents approximately the fourth week of the disease. Stress is laid on this for two reasons. In the first place if this is true, then prolonged periods of quarantine of patients are unnecessary and in the second place early bacteriological diagnosis of whooping cough is possible. In the series bacteriological diagnosis was attempted in three hundred cases. A bacteriological diagnosis was made in 60% of seventy-seven cases during the first two weeks of the disease. In the case of seventy-five patients seen during the third week the percentage was just under thirty, in forty-four patients seen during the fourth week of illness the percentage was below five. It has been shown that in whooping cough there is an absolute and relative lymphocytosis which reaches its highest point about the third week of the disease and then gradually resumes a normal level. Dr. Smith found that the average lymphocyte count for all patients at the time of admission was 16,400. At the same time he points out that in the interpretation of the blood picture in whooping cough it is necessary to take into consideration the age of the patient as the normal lymphocyte count decreases progressively during the age period when whooping cough predominates.

Dr. Smith discusses the value of X ray treatment in whooping cough. He has divided his patients into two main groups. The first comprises patients treated by X rays alone and the second those who were treated by X rays and vaccine therapy. In addition there was a small group of those who received no treatment at all. It is not necessary to describe in any detail the varying doses used with patients of different ages. For children over one year of age radiation of the chest from the anterior and posterior aspects was practised. In a small group of specially selected patients intensive treatment was used. Practically no difference was noticed between the results obtained in this group and those obtained with moderate doses. In 80% of the patients treated by X rays alone a definite diminution in the number and severity of the paroxysms occurred in a time interval ranging from a few hours to a week or ten days. The improvement was most noticeable in a group of infants who suffered from convulsions. Dr. Smith refers to views expressed by Gottlieb and Möller that patients with whooping cough who suffer from symptoms of the central nervous system, seldom recover. This has not been his experience and for this reason alone he holds that X ray treatment has justified its place in the therapy of whooping cough. He thinks that it is safe to conclude that the younger patients in the early paroxysmal stage show the most striking benefit. The second group of patients who received

[1] *The Journal of the American Medical Association*, July 18, 1925.

both X ray treatment and vaccines, numbered one hundred and fifty. In this group the percentage of patients who received benefit, was about the same. The degree of benefit seemed to be greater and the duration of the paroxysmal stage seemed to be reduced more by the combined method of treatment.

In discussing his results Dr. Smith states that the X ray treatment of whooping cough seems to have passed beyond the experimental stage. Various suggestions have been made as to the mechanism by which beneficial results are obtained. The most commonly held view is apparently accepted by Dr. Smith. According to this view a diminution in the nervous reflex is occasioned by a reduction in the size and consequently in the pressure of the lymphatic glands at the hilum of the lung. At the same time he thinks that some of the beneficial result may be due to an effect produced on the blood serum by the radiation. Dr. Smith refers also to the possibility of causing a possible harmful effect by radiation of the thyreoid and thymus glands.

In the discussion which followed the reading of the paper, Dr. I. A. Abt, of Chicago, said that he was not convinced of the curative effect of X ray therapy in whooping cough. While some patients seemed to be helped, he had seen a number of utter failures. It had been recorded that more than four hundred remedies had been suggested for the cure of whooping cough. Vaccine treatment was not a specific, though it was often of value. He referred also to the fact that imitation and suggestion increased the number of paroxysms in affected persons. He concluded that vaccine therapy and radiation should be employed in the early stages of the disease.

Dr. L. W. Smith in his reply drew attention to the question of latent tetany in convulsions associated with whooping cough and to the importance of making blood calcium determinations.

THE UTILIZATION OF CALCIUM IN THE BODY.

During the past five or six years certain facts concerning the utilization of calcium by the body have been discovered which have cast doubt on the orthodox doctrines concerning the pathogenesis of rhachitis. Although Huldschinsky was probably the first observer to record a beneficial action of ultraviolet rays on the course of rickets, Findlay had long taught that this disease was intimately associated with overcrowding and deficient sunlight. It remained for a group of workers from the Lister Institute of Preventive Medicine to demonstrate in von Pirquet's clinic in Vienna the extraordinary influence of ultraviolet rays on the metabolism of calcium. It has been admitted by everyone that the normal process of calcification and growth is governed to some extent by the fat-soluble vitamin *A*, but that this factor is not the sole agent in the maintenance of normal bone growth and calcification. At first sight it appeared that the accessory food factor played the determining part in all the phenomena of growth. Little by little evidence has been accumulated to prove that these evasive elements of the body economy act more or less indirectly and are to some extent replaceable. There is still much to be ascertained concerning the manner in which calcium can be absorbed and utilized by the body. Until the biochemical processes have been thoroughly explored and understood, it will be impossible to elucidate the real pathogenesis of rickets.

Dr. H. C. Sherman and Dr. F. L. MacLeod have recently carried out some interesting experiments which appear to throw some light on this subject.[1] Having determined the total calcium content of normal rats from the time of birth until adult life has been reached, they endeavoured to ascertain the extent and nature of the variations of the total and relative amount of calcium in the body under predetermined conditions. In the first place they discovered that in young female rats (under one hundred and twenty days) there is a distinct lowering of the calcium content of the body during the bearing and suckling of young. In the next place they found that rats whose growth was stunted as a result of deficiency of vitamin *A* or *B* or of protein, had a higher calcium content than normal rats of the same weight and a lower calcium content than normal rats of the same age, provided that an ample supply of calcium was ingested. On the other hand when the calcium intake was greatly restricted, the rats lost calcium and the calcium content fell below that of normal rats of the same weight as well as of rats of the same age. Rats were reared on a diet of one-sixth whole milk powder and five-sixths wheat. This diet is referred to as the deficient diet. These animals were found to have a lowered calcium content. Normal growth and calcification were obtained by feeding rats on one-third whole milk powder and two-thirds wheat. Cod liver oil was added to the deficient diet, but the rats remained below weight and their calcium content was only slightly raised above that of the animals on the deficient diet without additional vitamin. It is true that the addition of the vitamin (cod liver oil) caused an increase in body weight in male rats. The relative calcium content of the body was unchanged by the addition of cod liver oil. When calcium lactate was added to the deficient diet the body weight was slightly affected and remained below the normal. The absolute and relative quantities of calcium in the body were raised to a normal level. It thus appears that the addition of cod liver oil to a diet deficient in calcium and in fat-soluble vitamin *A* is incapable of preventing loss of weight and of calcium, while the addition of calcium lactate to the same diet actually improves the weight to a considerable extent and raises the calcium content to a normal level. It is not easy to find an adequate explanation of these results. It is estimated that the diet contained about one-half of the calcium and of the vitamin necessary for normal growth. Apparently the vitamin cannot be further reduced if life is to be supported. But unless more calcium is given, additional vitamin is of no avail.

[1] *The Journal of Biological Chemistry*, June, 1925.

Abstracts from Current Medical Literature.

MORBID ANATOMY.

Spontaneous Subarachnoid Hæmorrhage.

C. P. SYMONDS (*The Quarterly Journal of Medicine*, October, 1924) contributes an article in which spontaneous subarachnoid hæmorrhage is discussed from many points of view. The literature on the subject has been carefully studied and the pathological causes of primary spontaneous subarachnoid hæmorrhage are reviewed in one hundred and twenty-four cases. In forty-one of these, with an average age incidence of thirty, no satisfactory cause was found. An interesting hypothesis has recently been put forward by Goldflam in explanation of certain of the obscure cases of subarachnoid hæmorrhage. He notes, as others have done, that many of the patients attacked are young persons in normal health at the time of onset. Taking this into conjunction with the absence of findings *post mortem* in certain fatal cases, he suggests that the cause may be a functional disturbance of vasomotor control analogous to that which is said to occur in migraine, Raynaud's disease and erythro-melalgia. His thesis appears to be that, in the stage of active hyperæmia which follows that of abnormal vasoconstriction, capillary oozing may take place upon the surface of the brain. Goldflam appears to be unaware of the congenital group of aneurysms, for he rules out the possibility of aneurysm in ten of his patients on the ground that they were all under thirty years of age and presented no signs of vascular disease. The author states that intracranial aneurysms in young persons with no signs of cardio-vascular disease are of relatively common occurrence and that such aneurysms may give rise to the symptoms of subarachnoid hæmorrhage from leakage with recovery and months or years may elapse before further leakage occurs. Whether these aneurysms in young and apparently healthy persons are indeed due to congenital defects or whether they are caused by a local infective or degenerative process is a matter for further inquiry.

Solitary Serous Cysts of the Kidney.

G. F. MCKIM AND P. G. SMITH (*The Journal of Urology*, December, 1924) report three cases of solitary serous cysts of the kidney and refer to all the recorded cases in the literature. The condition is comparatively rare and is probably congenital. The gross pathology of the cysts suggests that they originate in that portion of the cortex immediately beneath the capsule of the kidney. The affected kidneys often show fœtal lobulation and other congenital malformations. Further Braumworth has definitely proved the presence of small cysts in the extreme outer portion of the renal cortex in fœtal and early life and he assumed that these fœtal cysts have their origin not in a prenatal inflammation but in a hindrance to development. In one of the author's specimens, in addition to the main large cyst there were three smaller cysts on the surface of the kidney near the large cyst. The authors say that serous cysts have no closer relationship with polycystic disease than that they are both congenital.

Malignant Papilloma of the Kidney Pelvis.

G. G. SMITH AND A. C. GILBERT (*The Journal of Urology*, January, 1925) report a case of papillary carcinoma of the kidney with apparently benign transplants in the ureter. The patient was a woman, sixty-one years of age. The authors say that tumours of the renal pelvis may be divided into papillary and non-papillary groups. Those of the papillary group tend to spread into the ureter and bladder by transplantation and are relatively slow to metastasize. The non-papillary group involves the ureter only by extension and metastasis is free and occurs at an early stage. Hæmaturia has been found with the former in over 70%; with the latter in only 50%. Stone has been found to be associated with the former in 7%; with the latter in 25%. In papillary tumours the ureter should be removed as well as the kidney; in non-papillary tumours complete ureterectomy is seldom necessary. The prognosis in the latter group is much worse than in the former.

Hydronephrosis in a Kidney With Extrarenal Calyces.

D. N. EISENDRATH (*The Journal of Urology*, January, 1925) records the notes of a man forty-four years of age who was found at operation to have hydronephrosis in a kidney with extrarenal calyces. The author found two similar cases in the literature and includes illustrations of them in his article. In Fürstner's case the same condition of extrarenal calyces was found in the poorly developed upper half of a double kidney. In Herz's case there was an anomaly quite like that in the author's case, for a number of minor calyces emptied directly into the renal pelvis and were almost entirely beyond the hilus. It is not difficult to interpret these findings if the fact is recalled that the ureter in the embryo divides into a number of calyces inside the renal blastema, but may do so equally well outside it, as in these cases.

Unilateral Renal Aplasia.

L. F. HUFFMAN (*The Journal of Urology*, October, 1924) records the notes of a patient who had unilateral renal aplasia with the ureter opening into the vas. No communication with the lower urinary tract could be found. The patient was a male, sixty-four years of age, said to have died of cerebral hæmorrhage. No trace of the left kidney could be found, the corresponding artery and vein also being absent. The left ureter was a tortuous thin walled tube measuring 22.5 centimetres in length and approximately one centimetre in diameter. Its upper extremity ended blindly and was situated at the normal level of the left kidney pelvis. At its lower end it opened into the proximal part of the left vas, which was considerably thickened and dilated, measuring twenty-three by twenty-five millimetres. Other anomalies were also noted in the same subject. The portal vein was placed anteriorly and ventral to the hepatic artery and common bile duct; the spine showed numerous defects.

Fibrosis of the Bronchi and Lungs in Childhood.

C. MCNEIL (*Edinburgh Medical Journal*, July, 1925) contributes an article on fibrosis of the lung as produced by bronchitis or bronchopneumonia in childhood. There is a striking physical change in the lung and yet as a rule no great disturbance in the general health. Bronchiectasis nearly always, perhaps always, accompanies an advanced fibroid condition of the lung. Laennec, the first to describe bronchiectasis, recognized the dense contracted condition of the lung substance, but he apparently regarded the bronchial dilatation as the primary condition. Laennec's views were accepted in France and also in Britain, notably in Ireland by Stokes (1837), but Corrigan, of Dublin, in 1838 published a paper entitled "Cirrhosis of the Lung." Corrigan stated that the fibrous condition of the lung was the primary change and the general fibrous overgrowth he likened to cirrhosis of the liver, a name borrowed by him from Laennec who had first applied it to hepatic fibrosis. The dispute that followed the publication of this new view is not even now settled, although Corrigan's theory is more generally accepted. In 1891 a classical monograph was published by Clark, Hadley and Chaplin. They collected forty-five cases of pure fibroid disease of the lung, tuberculosis being excluded by repeated examinations of the sputum. The symptoms were cough, dyspnœa and expectoration; hæmoptysis occurred in seventeen cases, but was never grave. Clubbing of the fingers was present in thirty-two cases, displacement of the heart in thirty-four cases, bronchiectasis was almost constantly present. The majority of the patients "presented the picture of health." McNeil records six cases in which the fibrous tissue was definite and well demonstrated. He believes that the originating illness in these patients is an inflammatory catarrh of the small bronchi and their adjoining alveolar surfaces. The age of onset in most of his

patients was at or about two years. Attacks of definite pneumonia may recur several times, but in the author's experience these attacks of pneumonia are less severe and prolonged than the ordinary attacks of pneumonia in an undamaged lung. In these children the common infectious disorders run an ordinary course and he believes that patients even with advanced fibroid lung are not more prone to active lung tuberculosis than are healthy children. In the author's patients the serum invariably failed to react to the Wassermann test and there were no clinical stigmata of syphilis. In none of his patients could the author satisfy himself that the original lesion became more extensive during childhood up to puberty. Case records show that life often goes on to middle age and to old age even with advanced contraction and fibrosis of the greater part of the lung.

MORPHOLOGY.

The Function of the Spinal Nucleus of the Trigeminal Nerve.

J. S. B. STAGFORD analyses the evidence as to the function of those sensory nerve fibres of the fifth cranial nerve which forms its descending spinal root in the *medulla oblongata* and *medulla spinalis* (*Journal of Anatomy*, January, 1925). The afferent fibres of the trigeminal nerve on entering the pons divide into two sets; one set, ascending slightly, passes direct to the main sensory nucleus situated in the tegmental part of the pons and a second set of fibres at once descends to form the well defined spinal tract. This tract diminishes gradually, its fibres terminating in the spinal nucleus lying along its medial side. There appears to be ample evidence to prove that the sensory fibres arising from the cells of the spinal nucleus cross the middle line and form a tract in close relation to the spinothalamic tract in the retroolivary region of the opposite side. The evidence is based upon a study of the distribution of the posterior inferior cerebellar artery as studied directly by injection of the artery and the correlation of these studies with the clinical findings in a large number of cases of occlusion of the posterior inferior cerebellar artery. The posterior inferior cerebellar artery in the majority of cases supplies fine twigs to the postero-lateral surface of the *medulla oblongata*. These twigs supply a considerable cross section area of the medulla for a vertical extent which corresponds to that of the inferior olive or even less. This area usually includes part of the spinal tract and nucleus of the fifth nerve. Hence occlusion of the posterior inferior cerebellar artery offers unique opportunity for studying the function of the spinal nucleus of the trigeminal nerve and the arrangement of the fibres in the spinal tract. There appears to be no doubt that only those sensory fibres concerned with the conduction of impulses induced by painful and thermal stimuli terminate in the spinal nucleus. Fibres concerned with the other elements of sensation must pass to the sensory nucleus in the pons. Finally, anatomical, clinical and experimental evidence seems to show conclusively that the fibres of the ophthalmic division descend to the caudal part of the spinal nucleus; those of the inferior maxillary division terminate in the cephalic division, whilst the fibres of the superior maxillary division end in the intermediate part of the nucleus.

X Ray Studies on Bronchial Movements.

CHARLES C. MOCKLIN gives the results of his further investigations of the elastic nature of the bronchial tree and the general behaviour of the lung more especially the bronchi in respiration (*American Journal of Anatomy*, May 15, 1925). The results are based largely upon X ray observations on normal human subjects. The author's conclusions are as follows: (i.) That there is an elongation of the trunk and of all the branches of the bronchial tree in full inspiration and in full expiration there is a corresponding shortening. (ii.) The bronchi were found to undergo inspiratory dilatation and expiratory narrowing; in other words, they are very flexible, extensible and dilatable and not stiff "like gas pipes." (iii.) A downward movement of the lower end of the trachea, main bronchi and lung roots was noted in passing from the phase of expiration to inspiration and an upward movement during the transition from inspiration to expiration. The author's remarks on the mode of acquisition of new intrapulmonary air space may be summarized thus. The bronchi do not separate with inspiration and the acquisition of new space is by the addition, as it were, of a peripheral shell. This shell is thickest at the base, probably thinnest at the mediastinum and gradually increases in a dorsal, lateral and forward direction. The bronchial angles do not alter. The author also emphasizes the fact that freedom of movement of the lung roots is essential to the free expansion of the apical regions of the lung particularly posteriorly, for if the lung roots were fixed, the adjacent parts of the lung tissue would not be able to follow the downward movement of the diaphragm freely. Without a downward movement of the lower portions of the lung tissue in inspiration the apical portion would be inflated only through the movements of the upper ribs. As Keith (1909) and others have pointed out, this is sufficient only for the inflation of the underlying ventral and lateral areas of lung, the posterior portion of the apical region being inflated through the movement of the diaphragm. Elimination of the influence of the diaphragm in the posterior portion of the upper lobe of the lung through fixation of the lung roots would necessarily result in a very deficient expansion of this section of lung tissue.

Factors Regulating Tissue Morphology.

E. BARTA (*Anatomical Record*, November, 1924) describes a series of experiments to demonstrate the effect of the medium on the cells in a culture of tissue *in vitro*. With the same tissue differentiation or dedifferentiation may be produced according to the medium used. The tissue used was the ureter of a white rat, three weeks old, and it was chosen because it contained epithelium, connective tissue and muscle. The media used were chick plasma, oxalated rat plasma and the above with embryonic rat extract added. In the heteroplasma without embryonic extract the epithelium degenerated, whilst the muscle and connective tissue cells were active. With embryonic extract the epithelial cells produced a membrane, whilst in homoplasma with embryonic extract an active, irregular growth occurred with numerous mitoses and an invasion of the neighbouring tissue by the epithelium in a manner similar to carcinoma. Hence in all tissue culture work the character of the media, the tissue and the thickness of the layer of media together with the age of the culture should be considered. The author considers that the variations of the morphology of the cells of the tissue used are mainly changes in shape and physical structure. The chemical characteristics as evidenced by staining reactions *et cetera* are unchanged. Hence the apparent changes of differentiation and dedifferentiation may be styled "adaptations to the media."

Cells of Trigeminal Motor Root.

W. F. ALLEN (*Journal of Comparative Neurology*, April, 1925) describes a series of experiments on the branches of the trigeminal nerve of the cat. In and about the motor root of the trigeminal nerve near the semilunar ganglion are numerous ganglion cells. By severance of the various branches of the trigeminal nerve it was found that these cells originated from the digastric and mylohyoid muscles and hence are to be regarded as proprioceptive in function. The proprioceptive impulses from the masseter and temporal muscles do not go to these cells, but are provided for by the midbrain nucleus of the mesencephalic root. Thus there is a tendency for the proprioceptive sensory cells of the cranial nerves to resemble the primitive condition seen in the irregular arrangement of sensory cells in the spinal nerves of lower forms, such as *Amphioxus*. The origin of these ganglion cells of the motor root of the trigeminal is uncertain. It is suggested that they may have migrated out along the motor root rather than from the neural crest.

British Medical Association News.

MEDICO-POLITICAL.

Meeting of the Federal Committee.

A meeting of the Federal Committee of the British Medical Association in Australia was held on August 26 and 27, 1925, in the B.M.A. Building, 30-34, Elizabeth Street, Sydney, Sir George A. Syme, K.B.E., the Chairman, in the chair.

Representatives.

The following representatives of the Branches were present:

New South Wales Branch: Dr. R. H. Todd, Dr. J. Adam Dick, C.M.G.

Victorian Branch: Sir George A. Syme, K.B.E., Dr. R. H. Fetherston.

Queensland Branch: Dr. J. Lockhart Gibson.

South Australian Branch: Dr. H. S. Newland, C.B.E., D.S.O., Dr. Bronte Smeaton.

Tasmanian Branch: Dr. D. H. E. Lines.

Apologies for non-attendance were received from Dr. F. A. Hadley and Dr. D. D. Paton, the representatives of the Western Australian Branch. The former appointed Dr. H. S. Newland as his proxy and the latter Dr. R. H. Todd. A telegram was also read from Dr. Gregory Sprott, one of the representatives of the Tasmanian Branch, apologising for his inability to attend.

Financial Statement.

The financial statement and balance sheet, together with a covering letter from the Honorary Auditor were read. It was resolved that copies of the balance sheet be distributed to the Councils of the several Branches and that it be published in The Medical Journal of Australia.

Medical Officers' Relief Fund (Federal).

A letter was read from Dr. W. H. Crago, accompanying a report of the Trustees of the Medical Officers' Relief Fund (Federal), together with an audited financial statement and balance sheet for the year ended June 30, 1925. It was noted that every claim for assistance from the fund had been met and that the *corpus* of the fund was still intact. The amount of the fund was £11,477 16s. 11d. as compared with £11,281 1s. 11d. on June 30, 1925.

Regulations Concerning Infants' Foods.

A letter had been received from the Sydney Chamber of Commerce concerning the want of uniformity in the regulation promulgated under the *Pure Foods Acts* and *Health Acts* of the several States in regard to infants' foods. It was held that the matter was not one with which the Committee could deal.

Ethical Rules.

A letter was read from the Western Australian Branch concerning a proposal to modify the rules of the Branch regulating advertisements in lay newspapers in regard to the resumption of practice. It was explained that the Federal Committee had formulated principles only of medical ethics and that the Western Australian Branch was free to adopt any rules for the guidance of its members which did not conflict with these principles.

FEDERAL COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION IN AUSTRALIA.

Statement of Receipts and Payments for Six Months Ended 30th June, 1925.

Receipts.	£ s. d.	£ s. d.
To Balance at 31st December, 1924—		
Union Bank of Australia Ltd.	99 3 8	
Government Savings Bank of New South Wales	520 7 4	
Cash on hand	3 16 11	
		623 7 11
„ Interest—		
Government Savings Bank of New South Wales		14 9 0
		£637 16 11

Payments.	£ s. d.	£ s. d.
By Travelling Expenses		45 14 4
„ Sundry Expenses		60 19 5
„ Presentation of President's Chair to the B.M.A., London, on behalf of Branches of the B.M.A. in Australia		98 10 0
„ Balance at 30th June, 1925—		
Union Bank of Australia Ltd.	97 9 4	
Government Savings Bank of New South Wales	334 16 4	
Cash on hand	0 7 6	
		432 13 2
		£637 16 11

AUSTRALASIAN MEDICAL CONGRESS (BRITISH MEDICAL ASSOCIATION)

ACCUMULATED FUNDS ACCOUNT.

Receipts.	£ s. d.	£ s. d.
To Balance at 31st December, 1924—		
Government Savings Bank of New South Wales	180 8 8	
„ Interest—		
Government Savings Bank of New South Wales	7 4 4	
		£187 13 0

Payments.	£ s. d.	£ s. d.
By Balance at 30th June, 1925—		
Government Savings Bank of New South Wales		187 13 0
		£187 13 0

(Signed) Robt. H. Todd,
Hon. Secretary.

Sydney, 25th August, 1925.

Audited and found correct.

(Signed) W. H. Crago,
Hon. Auditor.

Reservation of Land in Federal Capital Territory.

The Honorary Secretary reported that in accordance with instructions given at the last meeting of the Committee, a letter had been written to the Home and Territories Department concerning the reservation of land in the Federal Territory for scientific institutions and in particular for use by the Branches of the British Medical Association in Australia. The Department had replied that the matter had been referred to the Federal Capital Advisory Committee and that the Federal Committee would be advised as soon as a decision had been made. No further information had been received. It was therefore resolved to communicate directly with the Federal Capital Advisory Committee.

Reports by Private Practitioners to the Repatriation Commission.

A letter was read from the Victorian Branch, calling attention to the fact that medical practitioners were often asked by the Repatriation Department to supply information concerning ex-soldiers who were under their care as private patients. The Victorian Branch had been in communication with the Repatriation Department concerning this matter. The Department had given an undertaking that in future the information would not be sought unless the written consent of the patient had been secured (see THE MEDICAL JOURNAL OF AUSTRALIA, July 25, 1925, page 122).

British Medical Association Scholarships.

A letter was read from a member who had wished to apply for a British Medical Association Scholarship to assist him in conducting original research work. A form of application had been received by him from London, with the instruction that it be sent to the Federal Committee. The Honorary Secretary reported that no communication had come from London office concerning the matter. It was decided that the form be forwarded to the British Medical Association with the recommendation from the Committee that the application be favourably considered. It was also decided that in the event of further applications being sent in the same way to the Federal Committee, the Chairman should be empowered to deal with them.

The New British Medical Association Home.

Correspondence was read concerning the official opening of the British Medical Association House, Tavistock Square, London, at which Dr. W. N. Robertson, C.B.E., had represented the Federal Committee and had made the presentation on behalf of the Branches in Australia of a President's chair. On July 11, 1925, a cable to the following effect had been sent: "Australian Federal Committee sends salutations and congratulations, thirteenth July celebrations." Attention was called to the account published in the Special Commemorative Number of *The British Medical Journal* of July 18, 1925. In this issue there was an illustrated description of the new house, an illustrated account of the opening ceremony by His Majesty the King and a report of the evening entertainment at which Dr. Robertson presented the chair. The chair itself was described and illustrated in a separate editorial article. The Honorary Secretary also referred to an article which he had compiled at the request of Sir Dawson Williams, dealing with the Branches of the British Medical Association in Australia and their homes. Illustrations of the new British Medical Association House of the Victorian Branch and of the houses of the New South Wales Branch, Queensland Branch and South Australian Branch were included in the article.

PRESIDENT'S CHAIR IN THE BRITISH MEDICAL ASSOCIATION HOUSE, TAVISTOCK SQUARE, LONDON.

Gift of the Branches of the British Medical Association in Australia. (Reproduced through the courtesy of the editor of *The British Medical Journal*.)

Australasian Medical Congress (British Medical Association).

Correspondence with the Executive Committee of the Australasian Medical Congress (British Medical Association), Second Session, Dunedin, 1927, was read. At the request of the Executive Committee for monetary assistance to enable it to meet the preliminary expenses of the second session the sum of £200 was directed to be sent from the Australasian Medical Congress Accumulated Fund account. It was suggested that the amount should be refunded if the finances of the session proved satisfactory.

Medical Insurance Agency.

The Honorary Secretary submitted the draft memorandum and articles of association of the proposed medical insurance company which had been prepared in accordance with the previous directions of the Committee, and had been sent for perusal to the members of the Committee and to the Branches.

In the discussion which took place, it became apparent that owing to the different laws and different conditions obtaining in the several States, the company which would necessarily have to be registered in one State, would be hampered in its operations, whether it carried on insurance agency work only, after the manner of the Medical Insurance Agency in England, or undertook insurance risks on its own account. It was therefore moved by DR. R. H. TODD, seconded by Dr. D. H. E. LINES and resolved:

> That in view of the difficulties found to exist in carrying on an insurance company, whether limited to agency work or not, to operate in all the States, the Branches be encouraged for the present each to deal with the matter in its own way as may be found most suitable.

Dates of Meetings.

The Federal Committee at its meeting held on February 4 and 5, 1925, considered a proposal from the Tasmanian Branch to amend the constitution of the Committee to enable it to hold one meeting in each year later than the end of February. The proposal had been submitted to the several Branches and replies had been received from all the Branches approving of the substitution of the word "May" for the word "February" in Clause 4 (i.). The clause would thus read: ". . . . Provided that at least one meeting shall be held in the year not later than the last day of May." On the motion of DR. D. H. E. LINES, seconded by DR. J. LOCKHART GIBSON, the motion for the amendment of the clause was carried.

Director-General of Army Medical Services.

Notice of motion was read from the New South Wales Branch to the following effect:

> That the Director-General of Army Medical Services should be in full control of his department with direct access to the Minister.

This motion had been communicated to the Branches and the Queensland and Western Australian Branches had signified their concurrence.

Dr. J. Adam Dick pointed out that the Director-General of Army Medical Services was hampered by the necessity of appealing to the Adjutant-General when he wished to approach the Minister for Defence. Under the existing circumstances this practice was not detrimental to the interests of the Army Medical Services. It was conceivable, however, that there might be a want of harmony between the Director-General and the Adjutant-General and that he might experience great difficulty in gaining the ear of the Minister. In the course of a short discussion Sir George Syme reminded the members of the Committee that in February, 1921, they had formed a deputation to the Minister for Defence and had asked him to give favourable consideration to a proposal that the Director-General should have direct access to the members of the Military Board and should not be compelled to approach the Board or the Minister through the Adjutant-General. The Minister had promised to bring the views of the deputation before his colleagues. Dr. R. H. Fetherston suggested to Dr. Dick that the motion would be improved if they asked that the Director-General should have direct access to the members of the Military Board and to the Minister. The motion, extended in the manner suggested by Dr. Fetherston, was carried.

On the motion of Dr. J. A. Dick, seconded by Dr. J. Lockhart Gibson, it was resolved:

> That the foregoing resolution be communicated to the Minister for Defence with the request of the Federal Committee that this reform be carried out and that a copy be sent to the Director-General of Army Medical Services.

Medical Services in Public Hospitals.

The Honorary Secretary reported that the question that had been before the Committee at its last meeting of the advisability of drawing up a policy which would be as far as possible uniform throughout the Commonwealth, governing the conditions of medical services in public hospitals, had not advanced. The Branches had not responded to the communication sent to them. The difficulties in devising a policy suitable for all States were obvious.

Dr. R. H. Fetherston stated that the question of a hospital policy had been under consideration by the Council of the Victorian Branch for some time. Although this matter had not been finalized, he anticipated that it would not be long before the report would be submitted to the Branch.

On the motion of Dr. R. H. Todd, seconded by Dr. J. Lockhart Gibson, it was resolved:

> That the Victorian Branch be asked to send copies of its hospital policy when this has been adopted to the Federal Committee with a view to its being distributed to the Branches.

Industrial Hygiene Contracts.

The Honorary Secretary reported that the question of the conditions that should govern the employment of medical practitioners as industrial hygiene medical advisers, had not progressed since the last meeting of the Committee. He referred the members of the Committee to the rules of the British Medical Association in respect of the position of medical practitioners called in to examine (see "Annual Handbook," 1924-1925, page 181). The opinion was expressed that medical practitioners undertaking this class of work should have contracts and that each contract should have the approval of the Branch before it was completed.

Dr. Bronte Smeaton moved and Dr. D. H. E. Lines seconded:

> That the Branch Councils be requested to ask by circular to their members those who carry out work in connexion with employers of labour, to supply information (i.) regarding the terms of their contracts, if any, (ii.) the conditions of their attendance, if no contract exists. The object of the inquiry is to secure uniformity and protection of members doing this work.

The motion was carried.

The Committee then considered the special training needed by medical practitioners acting as industrial hygiene medical advisers. It was pointed out that the subject was a new one and that each exponent of industrial hygiene had to equip himself as best he could with relatively little guidance. Each industry had to be studied in order that the special hazards might be gauged and the necessary percautions adopted. The opinion was expressed that no special qualification or diploma would be of use at the present stage.

Dr. R. H. Todd moved and Dr. H. S. Newland seconded:

> That it is not desirable at the present time that an industrial hygiene medical adviser should be required to qualify specially before undertaking this class of medical practice, but that everyone who undertakes the duty of industrial hygiene medical adviser should make a special study of the conditions of the industry concerned.

The motion was carried.

It was further resolved that a model form of agreement for use between industrial hygiene medical adviser and employer be drafted for consideration at the next meeting of the Federal Committee.

Date of Next Meeting.

It was resolved that the next meeting be held in February, 1926, on a day to be fixed by the Chairman.

Votes of Thanks.

On the motion of Dr. J. Lockhart Gibson a hearty vote of thanks was accorded to the President and Council of the New South Wales Branch for their hospitality and for having provided accommodation for the meeting.

Dr. J. A. Dick moved a cordial vote of thanks to the Chairman, Sir George A. Symes, for the admirable manner in which he had conducted the business of the Federal Committee during the meeting. The motion was passed by acclamation.

NOMINATIONS AND ELECTIONS.

The undermentioned have been nominated members of the Victorian Branch of the British Medical Association:

O'Loughlin, William James, M.B., B.S., 1924 (Univ. Melbourne), 633 Glenhuntley Road, Elsternwick.

Eccles, John Carew, M.B., B.S., 1925 (Univ. Melbourne), 55, Wills Street, Kew.

Medical Societies.

THE MELBOURNE PÆDIATRIC SOCIETY.

A meeting of the Melbourne Pædiatric Society was held at the Children's Hospital, Melbourne, on June 10, 1925, Dr. Lionel Hood, the President, in the chair.

Contracted Calf Muscles and Pes Cavus.

Dr. H. Douglas Stephens showed a boy, aged twelve years, who had first presented himself at the Children's Hospital in October, 1920, suffering from a condition of *talipes equino-varus* and mild *pes cavus* of the left foot. At that time the left leg had been two centimetres shorter than the right and there had been 1.25 centimetres of atrophy of the calf muscles of the left side. The knee jerks had been present. There was some doubt as to the ætiology as there was no history of a previous attack of infantile paralysis and there was no suggestion of progressive spinal muscular atrophy. On this occasion the *tendo Achillis* had been lengthened and the tendon of the

extensor hallucis longus muscle transplanted to the lateral aspect of the foot.

In October, 1924, four years later, the boy had again been seen and the foot appeared to be in the same condition as before. The left foot could not be dorsiflexed beyond an angle of 115° while the right could be moved in a similar direction to an angle of 88°. The left leg at that time was the shorter by 2.5 centimetres and the left calf was 2.5 centimetres smaller in circumference than the right; the thigh also was slightly wasted. The transplanted tendon was acting and the equinus deformity had increased; the *pes cavus* also was increasing. The question whether the *tendo Achillis* should be again lengthened or whether a Steindler operation should be performed, had been raised. Dr. Stephens showed this patient for an expression of opinion as to the pathological condition underlying this type of deformity which he considered might be due to a birth injury, such as a cerebral lesion or a "pulled leg" causing damage to the lumbo-sacral plexus. He also asked members for suggestions as to what treatment, if any, they would advocate.

Dr. W. Kent Hughes considered that the deformity was probably the result of poliomyelitis, with a dropping of the foot at the midtarsal joint consequent on the contraction of the plantar fascia. He did not think tenotomy would improve the foot and advocated division of the plantar fascia from the medial aspect of the foot and "unfolding" of the foot at the midtarsal joint.

Dr. Stephens considered the condition was possibly due to stretching of the lumbar nerves at birth through pulling on the leg (comparable to Erb's palsy in the upper limb). He proposed to perform a modified Steindler operation.

Congenital Dislocation of the Hip.

Dr. H. Douglas Stephens next showed two girls, aged respectively eleven and four years; they were cousins and each had a congenital dislocation of the left hip joint. These patients were from a remote country district and both had had a painless limp from the time when they had begun to walk; apart from this they had experienced no disability. Both girls had 2.5 centimetres of shortening of the left lower extremity. In the elder child the head of the femur was dislocated directly upwards, while in the younger the dislocation was slightly dorsal to this position.

Dr. Stephens asked for an opinion as to treatment for the elder girl. He was disinclined to operate as the child was walking well without pain and had a good retaining socket.

Dr. J. G. Whitaker was opposed to any attempt at reduction.

Dr. W. Kent Hughes advocated replacing the head of the femur in its original position, as he anticipated that the pelvis would not develope properly if the child were allowed to grow up with the dislocation unreduced. He quoted the case of a girl whom he had treated twelve years previously for a similar condition at the age of eleven years. As a result this patient was able to play tennis without any disability.

Sporadic Cretinism.

Dr. W. W. McLaren showed a female patient, aged four years and eight months, who when first seen had presented the typical features of sporadic cretinism. She was the third child of a family of four, the others being aged respectively eight years, six years and one year and ten months. These children were normal as regards physique and intelligence. The mother had lived in the environs of Melbourne for ten years and had enjoyed good health throughout each of the pregnancies. The patient had not moved about of her own free will and had commenced to walk with assistance at the age of two years. She was extremely unemotional and never laughed or cried. When first seen at the age of four years she had been a small pale child in fairly good state of nutrition; the hair and skin had been dry and she had been "pot bellied" and had an umbilical hernia. There had been slight development of supraclavicular pads of fat. Thyreoid extract had been administered in increasing doses over a period of five months, but in a rather spasmodic manner owing to the mother being in ill-health. Under this treatment the child had exhibited decided improvement in all respects, but especially in her emotional state. Although she had grown ten centimetres in height since the commencement of treatment she was still shorter than her youngest brother, aged twenty-two months, and had not yet reached his stage of mental development.

Genu Valgum and Osteomyelitis.

Dr. J. G. Whitaker showed a girl, aged six years, who had been operated on twelve months previously for acute osteomyelitis involving both tibiæ; nine months later several small sequestra had been removed and the bone curetted. She had since developed a condition of *genu valgum*. Dr. Whitaker considered that this was probably secondary to the inflammatory condition which had been present in the upper ends of the tibiæ for a long period.

Dr. W. Kent Hughes advocated the operation of exenteration-diaphysectomy for both tibiæ in order to remove the infected bone and to allow of complete reformation of the tibiæ.

Dr. Hamilton Russell considered that the *genu valgum* was possibly quite independent of the osteomyelitis. He would open up both bones more completely, but was strongly opposed to the principle of removing the entire shaft as he did not think the bone would be reconstructed.

Dr. Rupert Downes stated that since the removal of the sequestra three months previously the child had shown definite improvement. He also was opposed to the more severe operation.

Dr. H. Douglas Stephens stated that he had abandoned the operation of diaphysectomy as he considered the results were unsatisfactory. He had seen several patients in whom after removal of the shaft the ends of the bone had become united in the course of years by a thin bony spicule without proper regeneration of the diaphysis. He preferred to "gutter" the bone efficiently and to allow a large involucrum to form.

Acute Infective Arthritis of the Hip Joint.

Dr. Lionel Hood presented a boy, aged ten years, who had been admitted to hospital four weeks previously with the history of pains in the hip joints, restlessness, anorexia and vomiting of five days' duration.

There had been no previous illnesses and the family history revealed no predisposition to tuberculosis or rheumatism. On examination the right lower extremity was seen to be slightly everted at the hip joint and held in a position of semiflexion at both the hip joint and knee joint. There was slight tenderness low down in both iliac fossæ, but no glands could be palpated. The patient was febrile and looked somewhat "toxic." The fever was unaffected and the pain uninfluenced by large doses of salicylates. The serum did not react to the Wassermann test. The leucocyte count was 15,000 per cubic millimetre. X ray examination revealed no definite bony changes in the pelvis or hip joint regions. No pathogenic micro-organisms had been grown from the blood in the culture tube. The pain was relieved by placing both limbs in the Hamilton Russell extension apparatus. A second X ray plate taken four weeks after admission had showed a definite irregularity in the heads of both femora and also in the acetabulum on the left side. Dr. Hood regarded the condition as one of acute arthritis of the hip joint with possibly some involvement of the *os innominatum* and asked for suggestions as to treatment.

Dr. Hamilton Russell agreed that the condition was an arthritis of the hip joint which might or might not suppurate and he advised the continued use of extension for a period of three months or longer.

Dr. W. G. Dismore Upjohn regarded the condition as a low grade staphylococcal septicæmia with probable localization in the sacro-iliac region which might require surgical intervention within four or five weeks.

Herpes Zoster.

Dr. J. H. Kelly showed a girl, aged eleven years, with *herpes zoster*, the characteristic lesions being distributed on the left side of the postero-lateral aspect of the chest

wall. He stated that X ray therapy was very efficient in this condition both for the initial neuralgic pain and also the irritable burning sensations of the later stages.

Periostitis of the Skull.

Dr. Mervyn Stewart showed a girl, aged ten years, who had a small, firm swelling over the right eyebrow which was approximately the same size as when it appeared first twelve months previously. There was a history of trauma a few days before the swelling had first been noticed. The child had been struck by a falling blackboard at school. She had also been injured in the same region through falling against a fender in infancy. The patient had suffered severe frontal headache for three months and on several occasions there had been slight epistaxis from the right nostril. Several X ray plates taken in various planes failed to show any deviation from the normal contour of the frontal bone. No reaction to the Wassermann and hydatid complement fixation tests and the Casoni test had been obtained.

Dr. Stewart regarded the swelling as being due to periostitis originated probably by the trauma and asked for any indications as to treatment.

Dr. W. G. Dismore Upjohn stated that he had seen a girl with a similar tumour who had later developed peculiar deformities in the limbs. This condition was known as diffuse fibrocystic osteitis; the X ray picture had revealed some rarefaction of the affected areas, there had been no traumatic ætiology and no treatment for the condition. He thought Dr. Stewart's patient might be suffering from a similar affection and suggested further X ray examination of the limbs and pelvis.

Infantile Hemiplegia.

Dr. Stewart's second patient was a male baby, aged nine months, suffering from left-sided infantile hemiplegia. The mother had first noticed stiffness of the left arm and leg when the child was six months old, but she thought this had improved considerably with massage and passive moment of the affected limbs. The patient was an only child, had been delivered by forceps after a difficult labour lasting twelve hours and when first seen the baby had had a distinct bruise over the right orbit and the right temporal region above the ear. Dr. Stewart asked for an expression of opinion as to the ultimate prognosis and as to whether any surgical treatment was indicated.

Dr. Hamilton Russell said that this patient fully amplified the old teaching "that when improvement is going on, be content and leave well alone." He did not think surgical intervention was indicated.

Mediastinal Lymphoblastoma.

Dr. B. L. Stanton showed some very interesting pathological specimens and blood films from a patient who had recently died in one of the medical wards. He regarded the condition as one of mediastinal lymphoblastoma, analogous to the leucosarcoma of Sternberg, but the blood picture was similar to that of acute lymphatic leuchæmia. The patient had been ill for twenty-two weeks and presented the symptoms of acute leuchæmia followed by a remission and later a final exacerbation of the original condition. A series of complete blood examinations carried out during the course of the illness had revealed remarkable variations occurring concurrently with the great changes in the patient's clinical condition. As an example of this it had been noted that during the periods of activity of the lymphoblastic tumour, the liver, the spleen and the kidneys had increased in size to a great extent without alteration in normal outline, while in the periods of remissions these viscera had regained the normal size. This variation occurred *pari passu* with an increase and a decrease in the number of circulating lymphoblasts. It suggested that the increased size of the organs was due not to metastases, but to infiltrations. That the tumour was not in the bone marrow was suggested by the fact that there was no interference with the production of the erythrocytes or of the ordinary circulating granulocytes. Unlike the ordinary case of leuchæmia it had been found that in the period of remission the blood picture was normal in every respect. Dr. Stanton proposed to report the case history in detail at a later date.

THE MATER MISERICORDIÆ PUBLIC HOSPITAL CLINICAL SOCIETY.

A meeting of the Mater Misericordiæ Public Hospital Clinical Society was held at the Hospital, Brisbane, on July 15, 1925.

Chronic Nephritis.

Dr. A. S. Roe presented a young man who had been admitted complaining of sickness and very severe headaches. The systolic blood pressure had been two hundred and twenty millimetres of mercury and the diastolic one hundred and fifty. The following day he had had a fit. Venesection had been performed with reduction of systolic and diastolic blood pressures to one hundred and fifty and one hundred and twenty millimetres respectively. A week later the pressure had returned to the previous level. The urea concentration had been 1.25%. Large septic tonsils had then been removed and a week later the blood pressure had been two hundred and one hundred and thirty millimetres of mercury. A trace of albumin had also been noted in the urine. The patient at the time of demonstration felt extremely well, though the pressure remained at one hundred and eighty and one hundred and thirty millimetres of mercury.

Dr. Roe said that he did not wish those present to think that this patient was cured, though undoubtedly there was improvement. He had seen other patients similar to this one in which the patients stated that they felt very well after tonsillectomy. They had however all died within three years.

Ureteral Calculus.

Dr. Roe also showed a young man admitted with a history of acute renal colic and hæmaturia. A radiogram had revealed two shadows in the region of the left ureter. Functional tests had shown that both kidneys secreted the dye in about the same time. Passage of a catheter had revealed no dilatation of the renal pelvis. A pyelogram had shown the ureter to be normal in size and shape and to lie away from one of the shadows which was a calcified gland. The passage of the catheter caused an attack of acute colic, but the stone had not left the ureter. Cystoscopy had revealed a swollen œdematous ureteral orifice with the general appearance of a stone about to be passed. A small amount of local anæsthetic had been applied and three cubic centimetres of sterile olive oil had been injected without moving the stone. The orifice had been fulgurated to enlarge the opening without success. He intended to pass two catheters up the ureter with the hope that they would cause the calculus to pass.

Phlebitis Following Gastro-Jejunostomy.

Dr. E. D. Ahern reported the case of a woman who had been affected by phlebitis in the femoral vein seventeen days after gastro-jejunostomy for duodenal ulcer. Ten cubic centimetres of a 0.5% solution of gentian violet and "Acriflavine" had been injected intravenously on three successive days. There had been an acute reaction after each injection, the temperature rising to 39.4° C. (103° F.) with a severe rigor. Following the third injection the patient had become much better and the temperature had dropped to normal.

He mentioned the power of gentian violet to kill Gram positive organisms, although it had no effect on Gram negative organisms. "Acriflavine," on the other hand, had a predilection for Gram negative organisms. "Acriflavine" mixed well with gentian violet, so an injection of the mixture would have an effect on organisms both of the streptococcal, staphylococcal and *Bacillus coli* groups. The mixture could be used if the exact nature of the causal organisms was not known.

Rodent Ulcer of the Eyelids.

Dr. B. L. W. Clarke showed a man whom he had treated for a large rodent ulcer of the eyelids after the removal

of the eye by the ophthalmologist. He considered the condition had greatly benefited by the treatment.

Syphilitic Periostitis of the Ulna.

Dr. Ellis Murphy presented a woman, aged twenty-nine, who was suffering from syphilitic periostitis of the ulna. She had been shown at the previous meeting of the Society when the only help to diagnosis had been a radiogram of the arm. At that time considerable discussion had taken place as to whether the condition was due to syphilis or a mild staphylococcal infection. The blood had yielded a strong reaction to the Wassermann test and the inflammation had subsided with antisyphilitic treatment.

Subacute Bacterial Endocarditis.

Dr. P. J. Kelly showed a young man suffering with pains in his joints and slight pyrexia. He had had rheumatic fever when three years old. The heart was dilated with the apex beat in the fifth left interspace and 1.25 centimetres (half an inch) to the left of the nipple line. Antistreptococcal serum had been administered with good results.

Dr. Kelly also demonstrated large vegetations on the mitral and tricuspid valves of the heart from the body of a patient who had died in the hospital three weeks previously from acute bacterial endocarditis.

Traumatic Injuries to the Eye.

Dr. Alexander MacDonald showed a boy who was suffering from an injury to the left eye caused by a stone. He demonstrated the condition of irido-dyalysis. The iris had been torn from its attachment on the lateral side, thus producing two pupils and double vision in the affected eye. He was being treated with eserine.

He also showed a man suffering from iritis of the right eye. This had become manifest after an injury to the eye with cement.

Sarcoma of the Mesentery.

Dr. G. W. Macartney, D.S.O., showed a woman, aged fifty-four, from whom he had removed a small spindle celled sarcoma of the mesentery. The patient had had an ovarian cyst removed eight years previously.

Pathological Specimens.

Dr. L. M. McKillop showed:

(i.) A specimen demonstrating Charcot's disease of the elbow joint.

(ii.) A specimen of gangrene of the hand in an old lady, aged seventy-five. The arm had been amputated at the level of the insertion of the deltoid.

(iii.) Melon seed bodies removed from a cyst under the *pectoralis major* muscle. The cyst had been closely connected with the nerves of the brachial plexus and part of it could not be removed. The lining membrane had been removed and the wound had been closed with an excellent result.

(iv.) Adeno-carcinoma with colloid degeneration arising in the scar of a wound from an operation on the gall bladder. The tumours had developed twelve months after the original operation.

Post-Graduate Work.

TROPICAL MEDICINE AND HYGIENE.

Arrangements are being made by the Commonwealth Department of Health for the initiation of a course of training in tropical medicine and tropical hygiene for medical graduates at the Australian Institute of Tropical Medicine, Townsville.

Should a sufficient number of applicants be forthcoming, it is proposed to commence the course about October 1, 1925. It will extend over the ensuing ten weeks with an additional two weeks for examinations, but will terminate in sufficient time to enable those attending the course to return to their homes prior to the Christmas holidays.

The subjects covered will include *inter alia* tropical medicine and hygiene, protozoology, helminthology, medical entomology, bacteriology, tropical pathology, immunity technique, tropical ophthalmology and demonstrations of various aspects of practical tropical sanitation. The theoretical part of the course will cover about one hundred and eighty hours and the practical part one hundred and fifty hours of actual teaching and demonstration.

The Australian Institute of Tropical Medicine is very fully equipped with all facilities for the teaching of its special subjects and has available a very large amount of tropical pathological material in addition to an extensive library.

Medical graduates attending the course will receive a certificate covering such attendance. Those sitting for an examination in theory and practice at the close of the course will receive a further certificate stating the standard attained.

A fee of ten guineas will be charged to cover costs of the course. Applicants will be required to provide their own microscopes, but all other scientific material will be furnished by the Institute.

Townsville is in regular communication by rail and steamer with the Australian capitals. Steamer fares, first saloon, are as follows: Melbourne to Townsville, £16 5s. single, £32 10s. return; Sydney to Townsville, £12 single, £24 return; Brisbane to Townsville, £7 10s. single, £15 return.

First class railway tickets are available for return in two months and interstate for three months from Brisbane.

The first class railway fare from Melbourne to Townsville is £12 9s. single, £19 19s. return; from Sydney to Townsville, £9 3s. single, £14 9s. return; from Brisbane to Townsville, £4 19s. single, £7 9s. return.

Hotel accommodation is available at Townsville at rates ranging from £2 2s. to £4 10s. Suitable boarding house or flat accommodation is difficult to obtain.

Intending applicants are requested to communicate with either the Director, Division of Tropical Hygiene, Commonwealth Department of Health, Eagle Street, Brisbane, or the Director, Australian Institute of Tropical Medicine, Townsville, North Queensland.

Correspondence.

Sir: The appended extract from *Punch* (1876) caught my eye. I feel sure that Mr. A. P. Herbert would never be guilty of anything so ungallant.

Yours etc.,
K. St. Vincent Welch.

235, Macquarie Street, Sydney.
September 1, 1925.

Physicians and Females.

Women are now eligible for the licence of the King and Queen's College of Physicians, Dublin and other licensing medical bodies are expected likewise to admit candidates of the gentler sex. There are some amongst the brotherhood of Physic who contemplate the admission of sisters with disfavour. Let us hope that this does not arise from a feeling of mean jealousy and a fear of competition with women such as that which possesses trades-unionists. What medical man, that is a man, can be afraid of a medical woman? Breathes there the Physician, in any considerable practice, who apprehends that the rivalry of females could ever possibly diminish his fees?

—*Punch*, November 11, 1876.

Naval and Military.

THE ROYAL AUSTRALIAN NAVY.

The attention of medical practitioners is directed to an advertisement appearing in the issue of September 12, 1925, in regard to the appointment of medical officers in the Royal Australian Navy.

Details of the career of medical practitioners in the Royal Australian Navy were given in the Education Number of THE MEDICAL JOURNAL OF AUSTRALIA, June 20, 1925. It will be noted that the conditions of service have been rendered more attractive during recent years.

Medical Prizes.

MATERNAL MORBIDITY AND MORTALITY.

THE Melbourne Permanent Committee for Post-Graduate Work informs us that the authors of the two essays declared by the examining committee to be *proxime accessit* are Dr. Marie Brown, of Verco Building, North Terrace Adelaide, authoress of the essay entitled "Forewarned is forearmed," and Dr. Hubert Jacobs, of Harley House, Collins Street, Melbourne, author of the essay "The Old Order Changeth, Giving Place to the New."

Books Received.

A SHORT KEY TO BOTH SEXES OF THE ANOPHELINE SPECIES OF INDIA, CEYLON AND MALAYA, by C. Strickland, M.A., B.Ch. (Cantab.); 1925. Calcutta and Simla: Thacker, Spink & Company. Crown 4to., pp. 19 with illustrations. Price: Rupee 1/12/-.

BIBLIOGRAPHIE DES LIVRES FRANÇAIS DE MÉDECINE ET DE SCIENCES, 1912-1925; 1925. Paris: Publiée par les maisons: J. B. Baillière et Fils, Gaston Doin, Masson et Cie, Poinat, Vigot Frères. Post 8vo., pp. 171.

MALE INFIBULATION, by Eric John Dingwall, M.A.; 1925. London: John Bale, Sons & Danielsson, Limited. Crown 8vo., pp. 145 with illustrations. Price: 10s. 6d. net.

MIDWIFERY, by Ten Teachers; under the direction of Comyns Berkeley, M.A., M.D., M.C. (Cantab.), F.R.C.P. (London); Third Edition; 1925. London: Edward Arnold & Company. Demy 8vo., pp. 778, with illustrations. Price: 24s. net.

MODERN SURGERY; GENERAL AND OPERATIVE, by John Chalmers Da Costa, M.D., LL.D., F.A.C.S.; Ninth Edition, Revised and Reset; 1925. Philadelphia and London: W. B. Saunders Company; Melbourne: James Little. Crown 4to., pp. 1527, with 1,200 illustrations. Price: 50s. net.

OPHTHALMIC NURSING, by Mary Mason Springgay; 1925. London: Methuen & Company, Limited. Crown 8vo., pp. 133, with illustrations. Price: 5s. net.

PHYSICAL DIAGNOSIS OF DISEASES OF THE CHEST, by Joseph H. Pratt, A.M., M.D., and George E. Bushnell, Ph.D., M.D.; 1925. Philadelphia and London: W. B. Saunders Company; Melbourne: James Little. Royal 8vo., pp. 522, with 166 illustrations. Price: 25s. net.

COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION, edited by Mrs. M. H. Mellish; Volume XVI.; 1925. Philadelphia and London: W. B. Saunders Company: Melbourne: James Little. Royal 8vo., pp. 1,331 with 254 illustrations. Price 65s. net.

Medical Appointments.

Dr. Herbert Henry Ernest Russell (B.M.A.) has been appointed an Acting Member of the Nurses' Registration Board, South Australia.

* * * *

Dr. William Allen Hunter has been appointed Health Officer of the Local Board of Health of the District Council of Yatala North, South Australia.

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Dr. Frank Winfield Williams (B.M.A.) has been appointed Public Vaccinator at Clunes, Victoria.

* * * *

Dr. James Phillips Jones has been appointed Public Vaccinator at Port Fairy, Victoria.

* * *

Dr. William George Cuscaden (B.M.A.) has been appointed Acting Public Vaccinator at St. Kilda, Victoria.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, *locum tenencies* sought, etc., see "Advertiser," page xvi

MOUNT MULLIGAN DISTRICT HOSPITAL, NORTH QUEENSLAND: Medical Officer.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIAN: Honorary Secretary, 12, North Terrace, Adelaide.	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

SEP. 22.—New South Wales Branch, B.M.A.: Medical Politics Committee: Organization and Science Committee.
SEP. 23.—Victorian Branch, B.M.A.: Council.
SEP. 23.—Western Medical Association, New South Wales.
SEP. 24.—New South Wales Branch, B.M.A.: Branch: Election of Two Members of Federal Committee.
SEP. 24.—South Australian Branch, B.M.A.: Branch.
SEP. 25.—Victorian Branch, B.M.A.: Annual Meeting.
SEP. 25.—Queensland Branch, B.M.A.: Council.
SEP. 25.—South-Eastern Medical Association, New South Wales.
SEP. 26.—Eastern District Medical Association, New South Wales.
OCT. 1.—Victorian Branch, B.M.A.: Branch, Election of Representatives of Divisions.
OCT. 1.—Section of Orthopædics, New South Wales Branch, B.M.A.
OCT. 2.—Queensland Branch, B.M.A.: Council.
OCT. 2.—New South Wales Branch, B.M.A.: Delegates of Local Associations meet Council (First Day).
OCT. 3.—New South Wales Branch, B.M.A.: Delegates of Local Associations meet Council (Second Day).

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